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ABSTRACT

This document consists of 32 consecutive issues of Mid-Western Educational Researcher, published quarterly from 1991 through 1998. Mid-Western Educational Researcher is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews, theoretical and methodological discussions that make an original contribution to the research literature, and feature columns. Each year, one issue is a program for the association's annual conference. Special theme issues during the 8-year period have included multicultural education (1992), midwestern history (1995), "The Bell Curve" (1996), regression analyses (1996), and the Internet in the classroom (1998). (SV)

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Volume 4, Number 1 Winter 1991

MID-WESTERN EDUCATIONAL RESEARCHER

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Welcome to the new *Mid-Western Educational Researcher*, formerly the *MWERA Researcher*. We are very excited about the changes and additions that have been made in the publication and hope that you will enjoy the new format. As the official publication of the Mid-Western Educational Research Association, we will continue to bring you information concerning the Association. In addition, we hope to provide you with interesting features and especially hope that you will consider contributing to the publication by submitting articles, news, and ideas.

One of the first changes that you have probably noticed is the cover. Each issue will feature a sponsoring institution on the cover and a brief description of their education program inside. An important addition for the publication was the addition of an editorial board. This distinguished group of educators have been instrumental in providing direction and ideas, and assist in the review of manuscripts. Each issue will contain an interview with a leader in education, as well as the "Voices in Education" section, which reports the responses of a number of noted educators to important questions facing our field. Research articles and other articles of interest to the membership are also included. A special pull-out section designed to provide practitioners with an accessible interpretation of research articles is presented entitled "Research Alive."

Although we have instituted some changes, the success of the journal rests with the membership. It is our hope that you find this journal useful and that it will help to draw new members to the Association. However, the publication cannot succeed without your contributions and feedback. We need good quality manuscripts for publication. We need feedback, criticism, and innovative ideas. We have been encouraged by the interest and support of the membership and hope that you will view the *Mid-Western Educational Researcher* as an interactive vehicle for your ideas and needs.

Information for Contributors to the Mid-Western Educational Researcher

The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 4, Number 1 Winter 1991

FEATURE

1990 MWERA Presidential Address
(Catastrophe Theory and Catastrophes in China's Civil Service Examinations)
By Ayres D'Costa, The Ohio State University
2

ARTICLES

What Reformers Would Have Us Do
(Recommendations for Improving Preservice Teacher Preparation Programs Drawn from 27 Reform Proposals)
By Donald Cruickshank and Marilyn Troyer, The Ohio State University
5

Making Education Work
Review by Pearlmarie Goddard
4

Research Alive
(Pullout section of practical applications of recent educational research)
By Jack Snowman and Pearlmarie Goddard; Edited by Jack Snowman
9

The Master Educator: An Interview with Benjamin S. Bloom
By Gregory J. Marchant, Ball State University
13

Effects of Training in Supervision on the Behavior of Cooperating Teachers
By Jody Daughtry, Susan Tracz, and Berta Gonzalez, California State University
16

Selection as a Validity Concern in Studies on the Effectiveness of Training Programs
By Timothy A. Brannock, Ball State University
19

Voices in Education
(Leaders in various fields of education respond to a common question)
20

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ON THE COVER

On the cover is a photograph of Pulliam Hall on the campus of Southern Illinois University at Carbondale. Chartered in 1869 as the Southern Illinois Normal University, graduate education was introduced in 1943. The College of Education consists of the departments of Curriculum and Instruction, Educational Administration and Higher Education, Educational Psychology, Health Education, Physical Education, Recreation, Special Education, Vocational Education Studies and the Rehabilitation Institute. Pulliam Hall houses several of those departments.

Presidential Address:

Catastrophe Theory and Catastrophes in China's Civil Service Examinations—(Part 1)

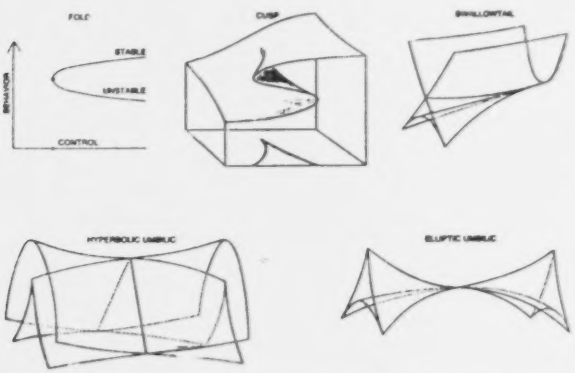
By Ayres D'Costa, The Ohio State University

Abstract

This is the first of two parts of the Presidential Address delivered on October 20, 1990, at the annual meeting of the Mid-Western Educational Research Association. This section introduces the concept of catastrophe theory. The second part will be published in the next issue and will present an outline of "catastrophes" in the evolution of Chinese national examinations.

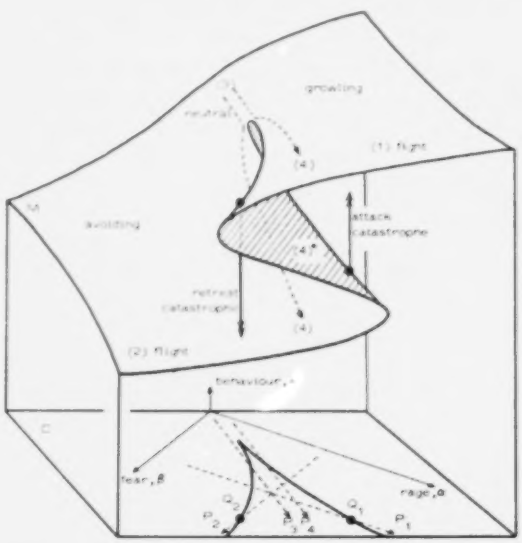
Rene Thom's (1975) catastrophe theory was first published in French in 1972 as an outline of a General Theory of Mathematical Models using a topological approach. Zeeman (1977), who has compiled several of the key papers (including translations from French) describes catastrophe theory as "a new mathematical method for describing the evolution of geometric forms in nature." It is hypothesized that the transition of national examinations systems and the socio-political forces acting on them can be represented geometrically using higher-order mathematical forms. A national examination system will change to accommodate itself to the political and social forces that keep acting on it. On rare occasions, these forces can become so strong as to require a complete collapse of the existing examination system. A totally new system may then evolve to meet the new needs. Such a dramatic change is called a "catastrophe."

The genius of Thom's theory is that it attempts a geometric representation of this phenomenon. Depending upon the number of independent forces or variables acting on it, the system can be represented by one of seven basic geometric forms, described as a fold, a cusp, a swallowtail, etc. (see Figure 1). The geometry of the system represents its resistance and resilience to the number and type of these stresses.



Graphs of five of the elementary catastrophes (reproduced with permission from Zeeman, 1977, p. 26, 34).

Catastrophe theory can be explained using a simple example adapted by Zeeman (1977) from Konrad Lorenz's study of aggression in dogs based on two drives, fear and rage. These are the two independent variables. Rage is measured by how much the dog's mouth is open or the teeth are bared, and fear is measured by how much the dog's ears lay back. An intruder advancing toward the dog brings on rage. An intruder who appears armed with an object (e.g., a stick) in hand brings on fear, which increases with the size or type of object. Each drive can be manipulated separately or jointly. Typically, as one increases rage (intruder advances closer and closer into dog's territorial space), there comes a point when the rage erupts into a vicious fight (Catastrophe Version #1). On the other hand, if one increases fear (intruder's weapon becomes increasingly more menacing to dog), the result effect will be flight (Catastrophe Version #2). Fight and flight are two manifestations of the catastrophe that is likely in this two-independent-variable model (see Figure 2).



The cusp-catastrophe illustrating fear and rage as conflicting factors influencing aggression (reproduced with permission from Zeeman, 1977, p. 6).

An increase in fear induces the dog to retreat and ultimately results in the flight catastrophe. This is represented on the lower flat surface by the line OQ_2P_2. An increase in rage

Catastrophes *(continued)*

results in the fight catastrophe, which is represented by OQ_1P_1. The combined figure $P_2Q_2OQ_1P_1$ is called a cusp. Here, P_2 and P_1 represent the two extreme points where the system breaks down and catastrophe occurs. The interesting part about this theory is that, if the outcome is assumed to be unidimensional (x) and there are two manipulated variables (a,b), then the system is always represented by a geometric form called a cusp, which is mathematically represented as:

$$x^4/4 - ax - bx^2/2$$

The behavior axis x ranges from outright flight (low x) to a vicious fight (high x). For each combination of rage (a) and fear (b), there is at least one most probable behavior (x). For many of the points (a, b, values) where either a or b is predominant, there will be just one probable behavior (x). Near the center, however, where rage and fear are almost equal, there are two probable behaviors, one high representing aggressiveness, and the other low, representing submissiveness. In addition, there is a third point representing the least likely neutral behavior. Note the three layers from the double fold or pleat in the top surface. The retreat or flight catastrophe is shown by a double-headed arrow representing a free fall off the top layer to the lowest layer. Likewise, the attack or fight catastrophe is shown by the double-headed arrow representing the jump from the lowest layer to the top layer.

If the edges of the pleat are projected on to the lower control surface (a,b), one sees the cusp-shaped curve $P_2Q_2OQ_1P_1$. As long as the a,b values stay outside the cusp, the corresponding behavior varies smoothly in relation to these two variables. However, when the a,b values are located inside the cusp and move to a critical point in it, a catastrophe is inevitable. What type of catastrophe occurs depends not on the present state, but on the recent history of the system. Adding fear to an enraged dog will produce a different catastrophe outcome from that produced by adding anger to a frightened dog.

Catastrophe theory is based upon complex theorems in multidimensional geometry, which classify the ways in which discontinuities can occur in terms of seven archetypal forms. Thom calls these forms 'elementary catastrophes.' Zeeman (1977, p. 1) states that "although the proofs are sophisticated, the elementary catastrophes are both surprising and relatively easy to understand and can be profitably used by scientists who are not expert mathematicians. Table 1 shows the seven elementary catastrophes and their respective mathematical properties. Thom's formulations allow a mathematical modeling of each type of system and the statistical testing for best fit of observed data. Using Thom's geometric forms, an analyst can plot the gradual buildup of tensions up to the point when the catastrophe occurs. A different manifestation of the catastrophe will occur depending upon which force was responsible for the breakdown. Retrospective analysis is then able to identify the key causal forces and the escalating tensions that resulted in the breakdown of the total system, even to the point of identifying the proverbial straw that broke the camel's back.

Table 1.

		dim X	dim C	Function f
Continuous	Fold	1	1	$\frac{1}{3}x^3 - ax$
	Cusp	1	2	$\frac{1}{4}x^4 - ax - \frac{1}{2}bx^2$
	Swallowtail	1	3	$\frac{1}{5}x^5 - ax - \frac{1}{2}bx^2 - \frac{1}{3}cx^3$
	Butterfly	1	4	$\frac{1}{6}x^6 - ax - \frac{1}{2}bx^2 - \frac{1}{3}cx^3 - \frac{1}{4}dx^4$
Umbilics	Hyperbolic	2	3	$x^3 + y^3 + ax + by + cxy$
	Elliptic	2	3	$x^3 - xy^2 + ax + by + c(x^2 + y^2)$
	Parabolic	2	4	$x^2y + y^4 + ax + by + cx^2 + dy^2$

The seven elementary catastrophes (reproduced with permission from Zeeman, 1977, p. 27).

Thom's theory can be applied in any field of science because it is reasonable to postulate that all systems with counterbalanced forces have natural limits on their endurance. We can be patient with a nagging spouse up to a point; our body will endure substance abuse only so far; and our nation's economy will stretch to accommodate its deficit only up to a limit. Catastrophic change is evident when mutations occur in biology, or a stock market collapses as it did on October 17, 1987; or as in Senator Eagleton's nervous breakdown, or as in the 1989 AT&T telephone exchange failure. Catastrophes are like human mortality. They may be expected, but they cannot be predicted.

Thom's theory is primarily geometric. He states that it is topology that characterizes live versus inert forces in a system. Catastrophes occur when there is a breakdown in the internal topological structure of the system under pressure. He then makes the rather startling statement that 'the only stable singularities of all catastrophes are determined solely by their *dimensionality*.' This simplifies the identification of the potential mathematical forms associated with each type of catastrophe. Thom identifies three major styles of catastrophic change: static, wave-front based, and metabolic. Presumably, the impact of these styles is subordinate to that imposed by the dimensionality of the system.

The appearance or anatomy of a catastrophe varies with the system that it occurs in, its dimensionality, and its style of change. Biology has its mutations, political systems their revolutions, the stock market its crashes, education its major reforms, and the human body its trauma. Catastrophes also occur in nature. We see them as earthquakes and volcanic eruptions. Initial signs of an erupting catastrophe may take the form of a new lump, as surface bubbles, as laminar or plate breaks, as a land area devastation, or as a totally new phenomenon.

Catastrophe theory methodology is appropriate for system analysis (such as the type described in Part 2 of this article).

(continued on page 4)

Catastrophes *(continued)*

The methodology permits the generation of research hypotheses. It describes the various local structures involved in the interplay. It enables the development of new theory because it is simple and parsimonious. It attempts to describe the complex ebb and flow of history in terms of visual mathematical models with a few critical variables. Just as the purpose of human medicine is not to predict the exact time of death but rather to understand the forces that cause it, our purpose is to learn and be able to prevent and manage catastrophes. Catastrophe-based models can be used in gaming or simulation exercises so as to develop complex managerial skills. The implementation of catastrophe methodology requires the analyst to follow four specific research steps:

1. One must conduct a historical macroanalysis to identify the critical points at which major catastrophes or critical morphogenetic transitions seem to have occurred in the development of a system.
2. These transition points are then analyzed in terms of the critical local structures that succumbed to the catastrophic change. Important conflicting variables are then identified. This allows one to hypothesize the dimensionality and mathematical form of the structure.
3. An attempt is made to study the catastrophe itself in order to determine its style of change. Usually, this would become evident in the expressions of key persons and institutions. This results in describing how the external dynamic (forces) affected the system, which structures (groups) specifically were affected, and what reactions or responses might have occurred.
4. Some recursive analyses ('what if . . . technique) can be conducted to attempt some futuristic 'predictions.' These are always hazardous, because as Thom cautions us, it is impossible to know exactly all the component structures in an existing system. The technique is useful for educational post-hoc analyses, e.g., to recognize how much 'slack' remained in the system at different historical points. Historians love to conjecture as to how much longer or how much further other existing forces might have proceeded before a major 'blow-up' occurred had a different social structural style existed.

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Making Education Work

Review by Pearlmarie Goddard

Dumaine, B. (1990). **Making education work.** *Fortune, 121* (12), 12–22.

John Dewey is quoted as saying, "What the best and wisest parent wants for his child, that must the community want for all its children." The entire Spring 1990 *Fortune* magazine is a special issue on "Saving Our Schools" that tells how business leaders, parents, teachers, and communities are starting to want for all its children. One article by Brian Dumaine, "Making Education Work," provides a positive overview of a number of successful collaborations between businesses and schools. Historically, business monies have primarily been allocated to universities and vocational schools. More recently, however, funds are being provided to schools for long-term programs to foment revolutions in curriculum and school management as well as small-scale projects that provide aid to individual students by tuition assistance, tutoring, and mentoring. There is the overall "desperate for resources" perception that businesses have about public schools, that any amount of money, time, or expertise that companies can provide will help. There is cited over 100,000 business-school partnerships formed since 1983. Such companies as IBM, Exxon, Coca-Cola, RJR Nabisco, Citicorp, and the Fannie Mae programs are stated as mounting a virtual crusade to help save the public schools. Items used to measure the success of projects includes students receiving higher grades, staying in schools, earning higher SAT and ACT scores, staying off drugs, and picking a career. Secondly, restructuring for site-based management is suggested as a measure of success. This popular reform in which principals and teachers, not politicians, set budgets and shape curriculum requires new skills. Recognizing this need, IBM, Xerox, and AT&T now offer selected public school teachers, principals, and administrators company manager training that includes finance, leadership, team-building, and communication. A third measure of success looks at the overhaul of antiquated education laws. The Business Roundtable, consisting of 200 CEOs from the largest American corporations, has persuaded 165 CEOs to adopt a state and work closely with the governor, legislators, and educators to pass and implement laws for systemic change. Businesses want a literate work force, smart consumers for their money, and—yes—their employees to feel good. Currently, this is not happening and education is labeled a crisis. To help solve this crisis, politicians, parents, principals, and business leaders must get deeply involved. Although many educators will dislike terms such as "fix" or "save" the schools, or the fact that non-educators are poking their noses into the field, it is difficult to argue that too many students and fine educators are being lost in the current system. This entire *Fortune* issue, but particularly this article, is written clearly and directly names problems, treatments, results, and recommendations.

What Reformers Would Have Us Do:

Recommendations for Improving Preservice Teacher Preparation Programs Drawn from 27 Reform Proposals

By Donald Cruickshank and Marilyn Troyer, The Ohio State University

Since 1933 more than two dozen documents have been written that speak directly to improving preservice teacher preparation in the United States. Inspected, they provide the field with reform-related thought spanning six decades. Gleanings should be particularly useful at times such as the present when revisions in teacher education programs are being considered, when states redesign program approval standards, and when the National Council for Accreditation of Teacher Education (NCATE) reformulates national standards. Such an inspection could yield a synthesis of recommendations. That was the intent of this study.

Method

Twenty-seven documents written with the intention of improving teacher preparation were analyzed (see references). A lengthy synthesis of the content of the documents was developed according to their recommendations about (1) preservice teachers (their recruitment, selection and retention); (2) teacher preparation faculty; (3) the teacher preparation curriculum; (4) instruction in teacher preparation; (5) the context and facilities for teacher preparation; (6) teacher preparation program evaluation; and (7) program governance. A matrix wherein the vertical axis contained the specific recommendations and the horizontal axis the document authors' names was created. Entries in the matrix cells indicated which documents were the source of each recommendation.

This article provides an overview of results by way of an interpretation of the complex matrix. Specifically, the question addressed was, What is the nature of the recommendations made in these documents? The analysis of the matrix was limited in that not all documents addressed all variables extant in teacher preparation (students, faculty, curriculum, instruction, etc.).

Results

Of the 157 recommendations identified, 79 of them were related to curriculum, 24 to instruction, 21 to faculty, 15 to preservice teachers, 10 to context and facilities, 5 to governance, and 3 to program evaluation. (A summary of the results appear in Table 1 on page 6.)

Curriculum Three times as many recommendations were made for improving curriculum as were made for any other variable. Therein were 27 overall recommendations, 8 to improve general education, 19 specifying the need to improve preservice teacher subject matter preparation, and 25 to improve professional education. With regard to the 27 overall recommendations, 4 of them were mentioned in 4 or more documents: teacher preparation for initial service should consist of a 5-year sequence combining both bachelor's and master's degrees [6]; entry-level professional training of teachers should take a minimum of 6 years [4]; courses and programs that are offered must grow out of and reflect carefully considered conceptions of education [4]; and every program for the initial preparation of teachers should include general education, subject specialization, and professional studies [4].

General education Eight recommendations were identified that were directed at this curriculum sub-component. Most notable was that 16 documents recommend a cohesive, planned program of general education, rather than an accumulation of courses scattered across a number of departments. The following areas within general education were most mentioned as desirable: psychology [12], sociology [11], anthropology [8], the arts [8], natural sciences [7], structure and uses of knowledge [7], literature [5], history [5], mathematics [5], humanities [4], speech/communication [4], and philosophy [4].

Academic or teaching specialization Nineteen recommendations related to academic or teaching specializations were made. The general conclusion reached in 19 documents was that prospective teachers should be well-prepared in the subject field they will teach and in related fields.

Professional education Twenty-five professional education recommendations were evident, but only one appeared in as many as four documents: professional education should be based upon a clear description of the role of the teacher and role characteristics known to be related to pupil learning. This reinforced the above noted general curriculum recommendation that programs be based upon thoughtful conceptions. All but three documents, however, made specific recommendations with regard to the professional curriculum topics. Those mentioned most frequently were: human growth and development [17], instructional strategies/techniques [16], diagnosing pupil needs and difficulties [14], learning theory [13], measurement and evaluation [12], instructional media and technology [12], community

(continued on page 6)

Recommendations *(continued)*

relations [11], classroom management [10], self-awareness [10], group dynamics [9], interpersonal relationships [9], curriculum design and development [9], selecting or developing and evaluating instructional materials [9], philosophy of education [9], research interpretation and application [9], values clarification [8], critical thinking and problem solving [8], exceptional children [8], planning instruction [8], parent relations [8], history of education [8], communication skills [7] and formulating instructional objectives [7].

Instruction The teacher preparation program variable next most mentioned with 24, instruction followed curriculum in number of recommendations. Eleven had the concurrence of more than four documents as follows: instruction should be individualized to meet the needs of specific preservice teachers [11], direct experiences in classrooms should be part of the entire program [8], training and evaluation of training should be performance-based [6], programs should help students develop their own styles rather than urging them to teach like someone else [5], instruc-

Table 1—Summary of Results

1. 157 recommendations gleaned from 27 reform teacher education reform proposals were identified and organized into seven categories: curriculum (79), instruction (24), teacher preparation faculty (21), preservice teachers (15), context-facilities (10), governance (5), evaluation (3).

2. Most mentioned recommendations by category with frequencies in parentheses.

   a. **Curriculum should:**
      (1) combine the baccalaureate and master's degree in five years [6]
      (2) take a minimum of six years [4]
      (3) grow out of a considered conception of education [4]
      (4) include general education, subject specialization, and professional studies [4]
      (5) reflect a cohesive, planned program of general education [16]
      (6) ensure teachers well-prepared in their subject specialty and in related fields [19]
      (7) in its professional part be based upon a clear description of the role of teacher and what is known about effective teaching [4]
      (8) in its professional part ensure coverage of specific, identified topics [24]

   b. **Instruction should:**
      (1) be individualized [11]
      (2) include a one-year internship [9]
      (3) provide experiences in K-12 classrooms throughout the programs [8]
      (4) be performance-based [6]
      (5) nurture personal teaching styles [5]
      (6) draw upon different instructional strategies and use latest aids and media [5]
      (7) be a demonstration of exemplary teaching [4]
      (8) engage preservice teachers in planning, carrying-out and evaluating the preservice experience [4]
      (9) include preservice teacher personal counseling [4]

   c. **Faculty should:**
      (1) involve all university faculty in teacher preparation [7]
      (2) model appropriate instructional techniques [6] (see 7 above)
      (3) recognize school-based faculty as regular faculty [6]
      (4) be knowledgeable of the whole field of teacher preparation, not just a specialty [4]
      (5) have regular scholarly contact and involvement in schools [3]
      (6) be prepared for work as school-based teacher educators [3]

   d. **Preservice teachers should:**
      (1) be selected based upon a system that is continuously evaluated [12]
      (2) be selected on the bases of commitment [7], collegiate academic success [6], communication skills [5], personal qualities [5], health-vitality [5], and intellect [5]
      (3) prior to graduation, demonstrate successful teaching [7]
      (4) prior to certification be tested to demonstrate knowledge of pedagogy related to effective teaching [5]

   e. **Context-facilities should:**
      (1) reflect use of ideal K-12 classrooms for preservice teacher preparation [4]
      (2) include community and community agencies [4]
      (3) include special training complexes [3]
      (4) include libraries containing instructional resources and technology

   f. **Governance** should be a collaborative effort of the university, organized teaching, local education agencies and the public [3]

   g. **Program evaluation** should be continuous and result in modifications [2]

Recommendations *(continued)*

tion in the program should model different instructional methods including use of the latest instructional aids and media [5], instruction should reflect exemplary teaching practices [4], programs should provide for preservice teacher self-direction and active participation in planning, carrying-out and evaluating the professional experience [4], and instruction in teacher preparation should include personal counseling to enhance preservice teacher development [4]. Instructional alternatives most often recommended for use in teacher preparation were: teaching in natural classrooms [22], classroom observation [14], simulations [8], protocol materials [7], microteaching [6], tutoring [5], and community and social agency projects [5].

Faculty Teachers of teachers received considerable attention in the reform documents and 21 related recommendations were identified. Four recommendations received the most support. Seven reform documents called for all-university faculty involvement in teacher preparation. Six required teacher educators to be exemplary teachers, and particularly that they model appropriate instructional techniques. These documents supported excellence in teaching as a major criterion for promotion and tenure. Six argued for recognition of school-based faculty (e.g., cooperating teachers) as members of the education faculty. Four documents recommended that all persons teaching teachers must not only be knowledgeable in their particular area of expertise but also have understanding of the whole process of teacher preparation and its attendant issues and problems. Mentioned in three documents each were the following recommendations: teacher educators should have regular contact with schools, they should be actively involved in research and scholarship directly related to classroom practices, and school-based teacher educators must receive preparation for their roles and should have joint or adjunct appointments.

Preservice teachers The variable which received the fourth-most recommendations had to do with preservice teacher recruitment, selection, admission and retention. Under that rubric, 12 recommendations were mentioned in five or more reports: student selection and retention should be a process of continuous evaluation of each student's progress and achievement, and should include close screening of candidates at various points in the training process [12]; preservice teachers should be admitted based upon commitment to the teaching profession [7], above average collegiate scholarship [6], demonstrated success academically [6], competence in communication skills [5], personal-social-emotional qualities [5], physical health and vitality [5], and measures of intellectual competence [5]; before graduation candidates should demonstrate their ability to teach successfully [7]; teacher preparation should have systematic recruitment programs [6]; and prior to certification candidates should pass an examination assessing knowledge of pedagogy related to effective teaching [5].

Context/facilities Ten recommendations were identified associated with context or facilities. Four documents each recommended that: teacher education programs should continue to be located in colleges and universities; universities should work with schools to create ideal K-12 classrooms for preservice teacher preparation; and preservice field experiences should not be limited to K-12 classrooms but should involve community activity. Three documents urged that training complexes should be established for use by both preservice and inservice teachers, and that facilities for preservice preparation should include libraries containing instructional resources and technology.

Governance Only one of the five governance recommendations was supported in more than one document. That one, evident in three proposals, recommended that governance of teacher education should be a collaborative effort involving the university, organized teaching, local education agencies and the public.

Program evaluation Of the four program evaluation recommendations, one received support in two documents: the program should be continually evaluated and modified based on input from preservice teachers, graduates in service, and education faculty.

Discussion

Since the recommendations derive from a great many documents issued over a period of 33 years during which the socio-political times varied tremendously, and since they originated from a variety of sources (governmental and nongovernmental, establishment and nonestablishment, liberal and conservative), it is hardly surprising that such a wide range of recommendations was offered and that consensus on them seemed moderate. Of greatest apparent overall concern to would-be reformers was the teacher preparation curriculum, and therein that attention be given to better general education for teachers, improved preparation in the content they will teach, and assurance that they will be better trained (i.e. attain specifically identified pedagogical knowledge and skills).

In the realm of instruction, reformers argued for individualization, better and more direct experiences in K-12 classrooms, modeling by education faculty of exemplary teaching practices, and use of campus-based laboratory experiences. In addition to recommending that education faculty model good practice, they were admonished to work collectively with academicians and school-based teacher educators to improve preservice preparation, to get into the schools, to know their field broadly (not just their specialty), and to do scholarship with direct application to classroom teaching.

Clearly reformers want better attention to preservice teacher selection and retention, particularly monitoring them throughout their program and giving further attention to finding and using valid predictors of teaching success.

(continued on page 8)

Recommendations *(continued)*

Fewer recommendations were related to context/facilities, governance, and program evaluation, not making them less notable but evidently receiving less attention.

Conclusions

The above recommendations stand as a motherlode of ideas. Since they derive from the most serious recent efforts toward teacher education reform in the United States, they deserve serious consideration by all teacher preparation stakeholders: professional education units, state program approval agencies, NCATE, teacher education associations and others.

It is incumbent upon teacher preparation units to convene faculty to weigh each recommendation asking such questions as: Is this a worthy goal? Why so? Where is this unit in relationship to the goal? Where does it want to be? How, if we wish, can we get from here to there?

Similarly agencies responsible for program accreditation and approval (NCATE, NASDTEC, learned societies and state agencies) should review the recommendations to determine the extent to which each is or should be promoted through their standards.

Of course, teacher education associations (AACTE, ATE) also should and could promote all or selected recommendations through resolutions and by way of task forces.

Finally, other stakeholders including the federal government, teacher organizations and foundations have similar responsibilities.

Not to reflect on this legacy of reform ideas is myopic at best and nonfeasant at worst. Clearly, many reform recommendations have not been accepted or at least not implemented. We need to ask, why not?

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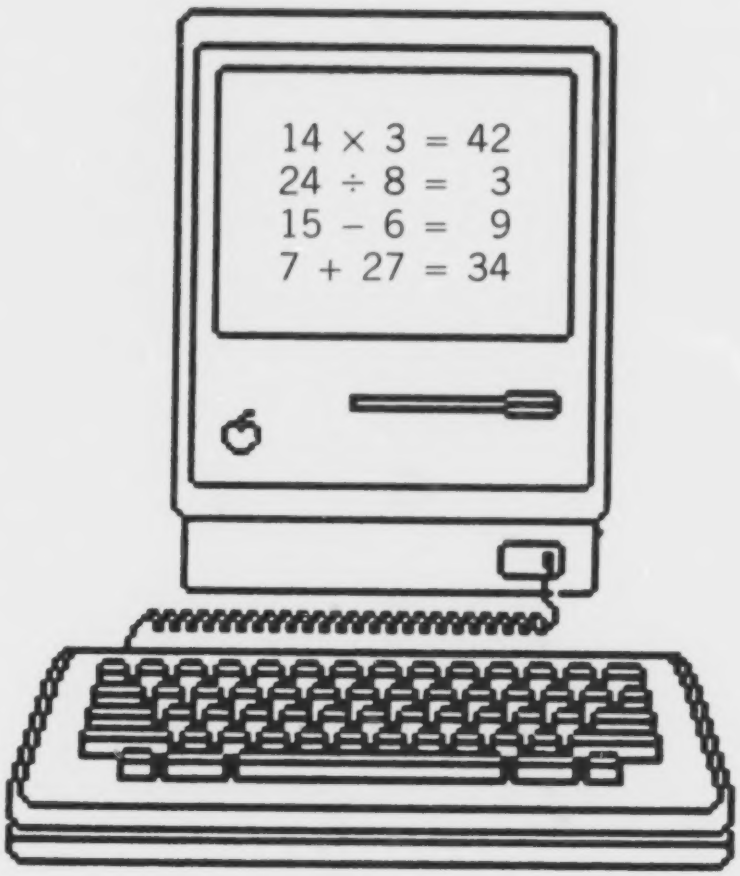
Special Section of Mid-Western Educational Researcher
Volume 4, Number 1 Winter 1991

RESEARCH ALIVE

Written by Jack Snowman and Pearlmanie Goddard
Edited by Jack Snowman



Research Alive is a special section of the *Mid-Western Educational Researcher* that is intended to identify some of the significant research that the reader may be interested in. Research will be presented in an abstracted form as it is assumed that many professionals are very busy and can't scan all of the literature that would be of interest and applicable to their practice. This section should provide professionals a brief look at research that they could then examine further if the article was of interest to them. The three articles that are abstracted for this issue have been chosen by Dr. Snowman and Dr. Goddard. It is hoped that the Research Alive section will be more than articles selected by a few experts, but rather an interactive endeavor. That is, the editors of this section of the *Mid-Western Educational Researcher* will select articles, but the reader may also suggest articles or topics of interest. This places a responsibility on our readers to identify their areas of interest and concern. Our goal is to make this section as sensitive to the needs of our readers as possible. It is also our hope that this section of the *Researcher* will be duplicated and disseminated among other interested readers and colleagues. We would appreciate your comments and suggestions.

Isadore Newman and Gregory Marchant, Co-Editors, Mid-Western Educational Researcher

Rieber, L. P. (1990). **Using computer animated graphics in science instruction with children.** *Journal of Educational Psychology, 82*(1), 135–140.

Think back for a moment to that first physics class you took in high school or junior high school. How would you describe the experience? For some the description might include such terms as boring, dry, confusing, dull, and nonmeaningful because you had to learn the concepts and principles largely, if not entirely, from text, lectures, and chalkboard diagrams. Recent research, however, suggest that well-designed computer-based instruction may save today's students from that same terrible fate.

In the March 1990 (Vol. 82, No. 1) issue of the *Journal of Educational Psychology*, Lloyd R. Rieber of Texas A&M University argues that computer-based physics instruction can be designed to include two features that may lead to increased levels of learning enjoyment. One feature is the use of animation to illustrate the motion and trajectory of objects. The second feature is the use of simulation activities to practice the application of basic principles.

To test the effectiveness of animation and practice, Rieber had fourth-grade and fifth-grade students learn Newton's laws of motion through one of six forms of a computer-based lesson. Students saw a lesson that contained either no graphics, static graphics (forces of motion and trajectory were represented by arrows and path lines), or animated graphics. Within each of these conditions, students engaged in either behavioral practice (answering multiple-choice questions and receiving corrective feedback), cognitive practice (simulating the movement of a starship in a frictionless, gravity-free environment by manipulating the speed and direction of a free-floating triangular symbol), or no practice. After the lesson, all students answered 35 multiple-choice questions that measured application of Newton's laws and completed a survey that measured their attitudes about computers, science, and the lesson that had just been presented.

Rieber's main finding was an interaction between degree of visual elaboration and type of practice. The animated graphics lesson had a positive effect only for those subjects who engaged in behavioral practice. Students who engaged in cognitive practice performed at the same level regardless of whether they saw animated graphics, static graphics, or no graphics. Although this was not the pattern anticipated by Rieber (he expected that students would depend less on practice as the visual elaboration in the lesson increased), it allows the same general conclusion about the role of practice that we mentioned in our summary of the Cohen and Riel study: the type of practice from which students will benefit most depends on the presence of other factors. The old prescription "Practice makes perfect" should be revised to read "Under condition X, practice Y makes perfect."

Finally, no differences in attitude were observed as a function of either visual elaboration or practice. Since previous research on computer-based instruction has often reported improvements in attitudes toward computers, the current finding may be indicating that today's youngsters are more familiar and comfortable with computers and computer-based instruction than their peers of five to ten years ago.

Cohen, M., & Riel, M. (1989). **The effect of distant audiences on students writing.** *American Educational Research Journal, 26* (2), 143–159.

There's an old story about a young violin student who gets lost on his way to a concert at New York's Carnegie Hall. Not wishing to arrive late, he stops an elderly passerby and says, "Pardon me, sir, but can you tell me how to get to Carnegie Hall?" The elderly man, noticing the violin case under the young man's arm, replies, "Practice, practice, practice!" The message of this story, and it is one that many educators accept at face value, is, of course, that practice makes perfect.

When the practice makes perfect notion is applied to the teaching of writing, students are given one or more writing assignments a week on various topics that are usually chosen by the teacher (e.g., "How recycling helps the environment"). Usually there is an implicit understanding between teacher and students that the purpose of the assignments is to practice the implementation of various writing skills and that the teacher will read the essays in order to evaluate how well these skills have been used.

Does such practice produce good good quality papers? Not necessarily, argue Moshe Cohen and Margaret Riel in the summer 1989 issue of the *American Educational Research Journal*. Cohen and Riel see this approach as limiting because the writing is done in an artificial context. That is, students write for the purpose of having previously learned skills evaluated by an authority figure rather than for the more common purpose of communicating ideas to a particular audience. Their argument is based on the findings of other researchers that accomplished adult writers (experts, if you will) vary the complexity, organization, and style of what they write as a function of who they are writing for, and that the self-initiated writings of primary grade children (novices) show more sensitivity to intended audiences than the teacher-imposed assignments of comparable age-mates.

To test their hypothesis that students who write for a real audience produce a better product than students who write only for the teacher's eyes, Cohen and Riel examined the compositions produced by students in two seventh-grade classrooms in a school in Jerusalem. In one classroom, students were told that they would be participating in something called the Inter-Cultural Learning Network. This involved writing a composition that would be typed into a computer and sent to an electronic mailbox in the United States where other students would retrieve it and read it. They were asked to write about one of four specific topics (e.g., a recent sporting event). One week later, the students were asked to write on the same topic as part of a scheduled exam. The students in the second classroom also wrote two compositions on one of the four assigned topics, but in the opposite sequence.

The papers from each classroom were scored wholistically by the classroom teacher on a 0–100 scale and by two independent raters on a 1–4 scale for content, organization, vocabulary, language use, and mechanics. Both teachers and raters were unaware of which papers reflected which audience condition.

(continued)

Student writing *(continued)*

Contrary to the teacher's expectations, the papers written to communicate with peers were rated higher by both the teachers and the independent raters than the papers written for the exam. The strongest effects were found for organization, content, and language use. When students wrote for a peer audience, their compositions were more fluent, better organized, and were more clearly stated and supported.

The main reason for the difference between compositions, according to Cohen and Riel, was that the seventh-grade students made fewer assumptions about how much background knowledge students in other countries were likely to have about their topics. Hence, the need to be more organized and explicit when writing for this audience.

Not surprisingly, Cohen and Riel recommend that students be given more opportunities to write for real audiences in order to share information and express opinions. Possible audiences include peers in other states and countries; local, state, and federal government officials; executives of companies that market products for children; and authors of children's books.

Even though Cohen and Riel's results may be due in part to Hawthorne Effect (a hypothesis that follow-up studies should confirm or reject), I think their recommendation is well worth exploring. I remember my own positive elementary school experiences with pen pals and, more recently, my daughter's delight in writing to and receiving a reply from children's author Judy Blume.

Carpenter, T. L., Fennema, E., Peterson, P. L., Chiang, C. P., and Loef, M. (1989). **Using knowledge of children's mathematics thinking in classroom teaching: An experimental study.** *American Educational Research Journal, 26*(4), 499–531.

Most assume that educators who are aware of and use research-based knowledge of learning processes and instructional practices are likely to be more effective teachers than their less enlightened peers. But wouldn't it be nice if we could cite some empirical evidence to support what we assume to be true? Well, help has arrived in the form of Thomas P. Carpenter, Elizabeth Fennema, penelope L. Peterson, Chi-Pang Chiang, and Megan Loef. In the Winter 1989 (Volume 26, No. 4) issue of the *American Educational Research Journal*, these researchers explore the question, Would first-grade teachers' mathematics instruction and students' mathematics achievement be influenced if the teachers were given explicit knowledge about children's understanding of mathematics concepts and problem-solving strategies?

The authors tested two hypotheses. The first hypothesis was that when first-grade teachers were taught about the differences among mathematical problems, how students' mathematical knowledge and skill evolve, and the strategies students use for mathematical problem solving, their classroom instruction would become more consistent with their newly acquired knowledge. The second hypothesis was that such knowledge would favorably affect the teachers' ability to assess their own students' mathematical competence and this would be reflected in the students' performance.

As part of a four-week summer workshop, these teachers were presented with research findings on the learning and development of addition and subtraction concepts in young children, and were given opportunities to think about and plan instruction based on this knowledge. One teacher commented that the importance of listening to children was heightened by knowing what questions to ask and for what types of responses to listen. The teachers were observed in their classrooms during the following academic year and were tested at the end of the year to see how much they knew of each students' mathematical strengths and weaknesses. The students were given a standardized mathematics achievement pretest in September and a series of posttests in April and May.

In comparison to a control group, experimental teachers spent significantly less time on the acquisition of number facts and significantly more time on the use of various problem-solving strategies. In addition, experimental teachers spent significantly more time listening to the thinking processes their students used and knew significantly more about each students' problem-solving processes.

Differences in student achievement were more modest. There were no overall differences between the experimental and control classes in students' ability to solve simple addition and subtraction word problems. Since the average scores for both groups were about 88 percent correct, this lack of difference was attributed mostly to a ceiling effect. Students in the experimental classes scored significantly higher on complex addition and subtraction word problems. This difference did not carry over, however, to advanced problems that involved multiple steps, extraneous information, or grouping and partitioning. Although the lack of transfer is disappointing, the good news in these results is that teachers need not worry that efforts aimed at improving mathematical problem-solving skills can be made only at the expense of mastery of basic computational skills.

In summary, Carpenter et al. answer an important practical question: Can the hugh body of knowledge that researchers present about how children think make a difference in the classroom? This article has shown that when teachers are made aware of research findings, they are inclined to alter what and how they teach, with subsequent beneficial effects on students' learning. Such findings contradict the quote, "A university does great things, but there is only thing it does not do; it does not intellectualize its neighborhood." (John Henry Cardinal Newman, 1801–1890).

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Education and Automaticity:

An Interview with Benjamin S. Bloom

By Gregory J. Marchant,
Ball State University

Benjamin S. Bloom is one of the most prominent educational leaders of our time. With publications translated into many languages he is known and respected throughout the world. He has advanced the cause of education through mastery learning, provided insights into learning through his taxonomy, and explored the development of automaticity in the talented. Photo by Bobbe Wolf, (c) 1988

M **How did you get started in education, and specifically how did you end up at the University of Chicago?**

B I met Ralph Tyler when I was working in Washington at the Civilian Conservation Corp camps. I was working on tests with mosquitoes, and we asked Tyler to come and review our work and tell us what we ought to do differently. I had prepared about 50 charts to explain our work. When I showed them to him, he quickly shuffled through them. I felt angry at him for ignoring my work. I soon came to realize that he had a photographic memory and knew the charts better than I did. So, I decided I was going to study with Ralph Tyler, who was at Ohio State at that time. I applied to Ohio State and then found out that he had moved to Chicago. I had no idea what Chicago was like, but I took my application and sent it to Chicago because I was going to study with this guy. I went there and eventually got to know him very well and worked with him on a number of projects.

M **Let's look at some of your interests such as mastery learning. A number of countries have embraced mastery learning. One of the things they have going for them is that they have a national curriculum. They know what they want to do, they know what their goals are. Do you advocate a national curriculum for the United States?**

B It's a hell of a big country. If you have a very small country and everybody's in agriculture, then there is a very narrow set of things that need to be taught. When you have a country like the United States, butchers and bakers and electricians, and everything, your problem really is: what should be the base for all of these people, and beyond that what should be emphasized or ignored? There is variety as well as constancy. The problem is really when do you go off in different directions.

M **How do you respond to critics that accuse mastery learning of strengthening the weakest link at the expense of the rest of the chain? In other words, people who say, "Fine, you may be decreasing the difference between the top and the bottom, but not only are you helping the person at the bottom, but you're also holding back the person at the top?"**

(continued on page 14)

B I don't see why it's necessary to have the same person teach the guy that is at the very top along with the guy that is at the very bottom. If you take a bunch of kids with IQs above 150 and put them in the class with a bunch of kids whose IQs are below 100 you have a problem in almost any case.

M **How do you get away from the idea of perpetuating some kind of ability grouping?**

B Not everyone wants or needs the same thing. They begin to divide and you have to have classes for these and classes for those even though the subject is not that different.

M **What do you see as being the effect of accountability, teacher accountability, when it comes to promoting mastery learning?**

B If you have three groups of students: one with 1-to-1 teaching, one with 1-to-30 mastery learning, and one with conventional 1-to-30 instruction. What you have is this one at the 50th percentile, this one is at about the 75th percentile, and this one here somewhere around the 90th percentile. Then your problem is, what are the alterable variable that you can begin to work with under conventional instruction, under conventional instruction plus enhanced prerequisites, mastery learning, mastery learning plus enhanced prerequisites, and so on. So what I'm trying to say is that we all don't have to eat from the same menu. We can make various combinations. You can bring virtually all the students up to the 90th percentile; but it's going to take time and effort.

M **Could you describe the concept of automaticity, which is the focus of much of your current work?**

B Automaticity involves a skill or manipulation that is so overlearned that one needs to pay very little attention to what is being done. If a skill has been automatized, you can do something else at the same time. You can now do two things at the same time. One that you do consciously and the other that you're doing almost without thought. When you're driving your car, you can be talking to your wife or somebody, or singing while you're driving. The driving is almost automatic. If I walk along the street and there's a dip in the pavement, and I'm talking to somebody, I go down that dip and go on without ever knowing I did so.

M **Do you see the development of automaticity as being linear, or do you believe there's any kind of developmental stages or hierarchy that occurs?**

B I'm sure there is, but I don't think we've really defined the stages as of yet.

M **Do you see any drawbacks to automaticity or is it always a positive efficient process?**

B I gather there were a great many accidents of pilots going from the plane to an automobile. The two don't fit exactly. So they can end up doing something that they do in the plane on the ground. You can also experience this problem if you originally learned to drive in the United States and then go to England.

M **So automatizing something wouldn't always have to be good. You could have a situation where a person has learned or overlearned a bad or less than perfect way of doing something or in other instances it could blind a person to important details.**

B A problem with automaticity is that something can become so automatic that you don't realize that you're doing it. Therefore, the problem becomes how do you keep some vigilance when you're doing something that typically is automatic. So automaticity many times is a blessing; other times it's really a curse. The question is how to get the best of it yet not be blinded to other things that might be wrong.

M **The reflective teaching movement suggests that teachers should be trained to constantly analyze and reflect upon their behaviors. However, the literature on expert teachers describes much of their practices as being patterns or routines that they perform almost automatically. What would you recommend to teachers or teacher education programs?**

B Try to keep them from becoming automatic.

M **You're work with talented individuals has identified automatized processes as being central to their talent. What would you say to parents that are interested in developing talent in their children?**

B Parents have to know that practicing a half hour a day is not going to be enough. To become talented you may start out practicing a half an hour a day, but that becomes an hour a day, an hour and a half, and two hours a day. Eventually they come to spend a third of their day practicing. If they don't do it, they get rusty. And if they have to change their repertoire, a tremendous amount of stress can occur.

M **What do you think the impact is on their lives, on them psychologically or socially as a result of having some skill that has set them apart as being talented?**

B It is clear that the whole notion of automaticity is a very powerful one, and the problem really is what are you sacrificing while you are trying to develop this. You cannot get to be an automatic pianist or violinist without putting in a tremendous amount of time. And so eventually it's about a third of your life. If you look at an actor, you find they overlearn their skill, their repertoire. Then sometimes they have difficulty separating what they're doing on the stage from what they're doing at the dinner table. To watch a clown at the circus. He isn't really the clown, but he *is* the clown, because he's doing it two or three times a day.

M **You're saying some people have a difficult time taking the makeup off once they've gotten into it.**

B When you overlearn something to such an extent that it's really a major part of you, something has been sacrificed.

M **What do you see as being the most positive movement in research, educational research today?**

B I've got a bunch of people working on evaluation of art, science, language arts, and so on. The question really is what is the content and what are the behaviors that you're after and under what conditions? And your problem really is how do you make a curriculum for one kind of student or another kind of student, or is there a curriculum you would want to be common for all those students?

M **So we need to make sure that we're within the context of a particular curriculum and a specific student group when we research effective teaching and learning. In general concerning the state of education Judith Lanier has suggested that as our society has changed from an industrial base to an information base the demands on education have changed. It's not enough to know what to do, now we must be able to think, analyze, synthesis, evaluate, and make decisions.**

B The basic thing I see is some people say "I want this and I want that," but we try to ask what are the objectives we have. In almost every field there are knowledge and comprehension objectives. But then there are applications, analysis, and synthesis of objectives. And unless you know the basics you can't do that. So our problem as a society really is that we have spent several generations trying to teach what to know and comprehend and not what to do with it.

M **Thus far, what do you consider as your biggest contribution to education?**

B I think the taxonomy was a brave attempt. A simple easy to handle taxonomy that dealt with every subject has proven to be popular and useful to a number of people.

Effects of Training in Supervision on the Behavior of Cooperating Teachers

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Abstract

The purpose of this study was to determine the effects of short-term, intensive training in supervision on the behavior of cooperating teachers. Trained and untrained cooperating teachers were compared on 17 behaviors including observational practices, analyses of student teacher performance, and feedback techniques. A series of two-tailed independent *t*-tests was performed on each of the behaviors. In all cases the means for the cooperating teachers receiving training were higher than those who did not receive training. In addition, the ratings indicated that there were significant differences favoring trained teachers in 5 out of 17 behaviors. These results indicate that even short-term training may have a significant, positive effect on supervisory behavior.

Student teaching is widely regarded as the most significant component of teacher training programs, and supervision is a key element in student teaching (Zahorik, 1988). While supervision is generally provided by both university faculty and cooperating teachers, research indicates that cooperating teachers have by far the greater influence on student teachers (Seperson and Joyce, 1981). During the past two decades numerous supervision models have been developed that focus on helping student teachers to improve their pedagogical skills. Some models also aim at expanding the student teachers' capacity to analyze and be reflective about their own teaching and to alter their teaching behavior based on this reflection.

While graduate programs in supervison provide ample coverage of theory and practice in supervision, few cooperating teachers hold advanced degrees in this area. Most have had little or no supervisory training of any kind (Freiberg & Waxman, 1988). Cognizant of both the key role played by cooperating teachers in clinical experiences and their general lack of preparation to carry out this role, some colleges and universities have begun to invest time and money in supervisory training for these teachers (Fields, 1988; McNergney, Lloyd, Mintz, & Moore, 1988; Morehead, Lyman, & Waters, 1988).

These training programs vary widely in scope, sequence, and duration. To date, little research has been conducted concerning their effectiveness.

Methods

The purpose of this study was to determine the effects of short-term, intensive training in supervision on the behavior of cooperating teachers. In this study, supervision was defined as the improvement of classroom performance of the (student) teacher through observation, analysis, and treatment of that performance (Cogan, 1964).

Subjects The subjects for this study were elementary and secondary student teachers in a large teacher education department. They were mailed a survey concerning their cooperating teachers' supervisory behavior near the end of their student teaching experience. Of the 147 student teachers who were surveyed, 70 (48 percent) responded. The insistence by a local teacher's union on absolute anonymity for the cooperating teachers being assessed, made it impossible to mail follow-up surveys to try to increase the response rate. The questionnaires were coded to indicate whether the student teacher had a cooperating teacher who was trained.

In order to become a cooperating teacher and train student teachers, teachers must fulfill a rigorous set of requirements. Although specific requirements differ from district to district, all cooperating teachers must be identified by their building principal and their district curriculum coordinator as being exemplary teachers, as well as having the potential to mentor novice teachers.

In addition, the cooperating teachers who supervised the responding student teachers consisted of two groups. The first group had attended a special training program on student-teacher supervision practices, while the second group had received no training. The cooperating teachers who received training applied to a local university for program admission. These teachers were required to submit a statement on their philosophy of education and a letter of support from their principal. They received a stipend of $225 for attending the supervisory training program.

Instrument Student teachers rated their cooperating teachers' behaviors on an instrument consisting of 17 five-point Likert-type items on observational practices, analyses of student-teacher performance, and feedback techniques (see Table 1 for a list of all instrument items). This instrument was designed by Far West Laboratory to be used for the evaluation of varying training programs offered on several university campuses.

Procedures The training program for cooperating teachers consisted of 15 clock hours of instruction. Four groups, of approximately 100 cooperating teachers each, were trained in four separate sessions over a two-year period. The first training group consisted of both elementary and secondary teachers. In response to a formative evaluation conducted after the training session, subsequent training was done separately for elementary and secondary teachers. *(continued on page 18)*

Table 1
Means and T-Test Results Comparing Untrained and Trained Teachers

Variables	Untrained Teachers Mean (n = 42)	Trained Teachers Mean (n = 28)	t
a. Critiqued lesson plans	2.45	3.18	−3.32†
b. Jointly planned lessons	2.17	3.00	−4.80†
c. Pre-conferenced	2.24	3.18	−4.30†
d. Observed 20+ minutes	3.36	3.82	−2.88†
e. Took detailed observation notes	2.21	2.46	− .89
f. Conferenced within one day	2.88	3.36	−1.85
g. Provided examples of behavior	2.48	2.71	− .96
h. Asked for lesson assessment	2.33	2.71	−1.52
i. Coupled suggestion with examples	2.80	3.14	−1.89
j. Allowed experimentation	3.19	3.25	− .30
k. Checked understanding of feedback	2.62	3.00	−1.81
l. Asked clarifying questions	2.48	2.75	−1.13
m. Assisted in analysis of lesson quality	2.64	3.04	−1.82
n. Proposed alternatives	2.67	3.07	−2.11*
o. Cited examples of teaching behavior	2.50	2.54	− .16
p. Helped with materials	2.74	3.07	−1.43
q. Conveyed sense of value	3.12	3.25	− .46

*p .05
†p .01

These teachers were trained to use Cogan's (1964) five-step supervision model consisting of the pre-observation conference, observation, lesson analysis, the post-observation conference, and the post-conference analysis. The training was designed to improve cooperating teachers' abilities in the following areas: establishing rapport with student teachers, observing student teachers for key elements of effective teaching, analyzing observations, conducting post-observation conferences, giving focused feedback about lessons, and improving student teachers' capacity to reflect on their own teaching.

Cooperating teachers practiced observing and analyzing lessons through the use of videotapes of students teaching classes in their regular student-teaching assignments. All cooperating teachers viewed taped lessons appropriate to their grade level or subject area (e.g., elementary, bilingual elementary, middle school physical education, high school English). A structured observation form was used and conferencing procedures were taught that included both direct feedback and questioning to encourage reflection on the part of the student teachers.

Results

A series of two-tailed independent t-tests was performed on each of 17 cooperating teacher behaviors (see Table 1). In all cases the means for the trained cooperating teachers were higher than those for the untrained cooperating teachers. In addition, the ratings indicated that there were significant differences between trained and untrained teachers on 5 out of 17 behaviors. Trained teachers engaged in the following behaviors significantly more often than untrained teachers: critiquing lesson plans, jointly planning lessons with student teachers, preconferencing before observations, observing the student teacher for 20 or more minutes, and proposing alternative strategies or materials.

Discussion

While the literature is filled with exhortations to train cooperating teachers, few studies have examined the effects of such training. This study indicates that even short-term training can have a significant, positive effect on supervisory behavior. However, in this study, the relationship between the specific content of the training and the areas of greatest difference between trained and untrained cooperating teachers was not entirely clear. It appears that as a result of the training, teachers engaged in preconferencing, observation, and postconferencing more frequently than untrained teachers, but that the training had little effect on what they do during these supervision activities. For example, while trained teachers were found to observe students more frequently than untrained teachers, they were not significantly more likely to take notes during observations. The fact that the duration of the training was only 15 hours might explain the lack of impact on the finer points of supervision. Perhaps the brief training program simply served to emphasize the importance of the supervision process, encouraging the teachers to do more supervision as opposed to supervising differently.

This study supports the position that supervisory training for cooperating teachers is worthwhile. This position would be strengthened by replication using a larger sample size, randomly selecting the cooperating teachers to be trained, examination of the impact of training programs of longer duration, providing training in different models of supervision, and assessing supervisory behavior through direct observation.

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Selection as a Validity Concern in Studies on the Effectiveness of Training Programs

Timothy A. Brannock, Ball State University

Internal validity refers to the ability to make causal statements regarding two variables (Cook & Campbell, 1979). In other words, does the treatment really affect the treatment group? In looking at the effects of a treatment one must design studies in such a manner to eliminate or at least reduce the possibility of that factors other than the treatment are causing an effect on the treatment group. These factors ae considered threats to the internal validity of the study.

One such threat to internal validity that is of particular concern to studies on program effectiveness is that of the selection of the participants in the training. Selection may be considered a threat to internal validity "when an effect may be due to the difference between the kinds of people in one experimental group as opposed to another (Cook & Campbell, 1979, p. 53)." One of the ways in which selection occurs is through the use of volunteers in the treatment group. Subjects who volunteer to be treated may possess certain characteristics, such as motivation, that non-volunteering subjects do not.

The selection of people poses a threat to the internal validity of studies that evaluate the effectiveness of training programs. There are various approaches to help minimize the selection threat. The following are some approaches to help rule out motivation to volunteer and differing characteristics of participants in program effectiveness studies: assignment of trainees, examining and controlling for characteristics of the experimental and control group subjects, comparing pre- and post-test behaviors of those trained, use volunteers for both groups, have the study compare different treatments for each group, or one might not control for the threat but mention it as a possible factor.

Having the authority to assign people to participate in studies is not a common occurrence. However, to some extent the military does have this authority with its members. In a study of fuel savings for aircraft Edwards (1986) was able to assign pilots to computer-based instruction or traditional instruction groups.

Another method of minimizing selection problems with volunteers involves examining the characteristics of the volunteers compared to those not volunteering. In a study of parent training (Giannotti & Doyle, 1982) Chi-square analyses were performed on socioeconomic factors of the parents who volunteered for training and those who did not. Socioeconomic factors and the results of attitude inventories may provide insights into the characteristics and motivation of program participants.

The most common way of relating a difference to a treatment effect is through the use of pre- and post-test measurements (Cook & Campbell, 1979). This was done by Noller and Taylor (1989) and Goetaski (1983) in studies on parent effectiveness training, by Kruger and Smith (1987) on management training, and by Noe and Schmitt (1986) in a study on school administration training (in this study motivation was linked to training effectiveness).

A fourth way of lessening the concern about internal validity related to volunteering would be to include only volunteers in the study. This can be accomplished by providing treatment to one randomly selected group of volunteers while the other group does not receive treatment until after the outcome has been measured. A less ideal arrangement allows the subjects to volunteer for a particular treatment or nontreatment group. Professors volunteered to be trained or simply to be observed concerning effective interaction skills (Long, Sadker, & Sadker, 1986).

Comparisons can also be made between two treatment procedures with two treatment groups. In this case volunteering subjects are placed in one of two or more treatment groups. This was done by Bosco and Wagner (1988) in a study of safety instruction and by Kearsley (1988) in a study on computer-based training.

Another means of dealing with the issue of selection related to internal validity without controlling for it is to adknowledge that the nature of the subject selection could provide an alternative explanation of the results. Daughtry, Tracz, and Gonzalez (1991) allude to this in the article presented in this issue of the *Mid-Western Educational Researcher* when they call for "randomly selecting the cooperating teachers to be trained, . . . providing training in different models of supervision."

Internal validity is a critical area of concern for any study. Studies concerning the effectiveness of certain training procedures need to be careful regarding the nature of the selection procedures of their participants. Volunteers may be more highly motivated or possess certain other characteristics, which may be as related to the outcome of a study as the treatment procedure used. Evaluation of training programs is to be encouraged, however, proper selection procedures are also necessary.

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(continued on page 20)

Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

What is the greatest problem facing education today?

I think the greatest problem facing American education today is the same as that facing American education since the time of universal, compulsory education. (We only rediscover the problem periodically; it persistently exists). This problem, simply stated, is the failure to educate large numbers of students who are enrolled (some might say, held captive) in our schools. It amuses me, in a black humor sort of way, that separate task forces are being formed for "at-risk" students, dropout prevention, and compensatory education when the targets of these various task forces are the same students.

—Lorin Anderson, University of South Carolina

. . . student motivation to learn school subjects from junior high up is the biggest problem, especially for poor and minority children. *—David Berliner, Arizona State University*

. . . teaching to the diverse population of learners; educating them for conceptual understanding, problem solving, etc.

—Hilda Borko, University of Maryland

. . . educating the children of the poor, the sick, and those who are very different from ourselves.

—Christopher Clark, Michigan State University

. . . the speed at which things are changing. Students have to move faster, learn faster, think faster, and be adaptive with the pace of information flow. They also have to have better pattern recognition and better relationship skills to handle this kind of change—it's stress provoking!

—Lyn Corno, Teachers College Columbia

. . . creating the type of contexts within schools that allow students to be interested in learning and self-regulating in their own school-related behaviors.

—Edward Deci, University of Rochester

The greatest problem facing education is taking school reform seriously. For too many years small, piece-meal approaches to the improvement of educational practice have been proposed. We need to face up to the fact that significant educational improvement will require attention to the way in which school as a social institution is organized as well as what and how we teach.

—Elliot Eisner, Stanford University

The tremendous gap between our research knowledge base of best and most effective practice, and what typically takes place in vast majority of classrooms is, I believe, our greatest problem. *—Thomas Guskey, University of Kentucky*

. . . the widespread practice of ineffective instruction, hence unsatisfying learning. *—James Popham, UCLA*

. . . collapse of value concensus, leading to public schools being amoral fact factories. *—Kevin Ryan, Boston University*

. . . helping children learn where parents have never had an adequate education. *—Ralph Tyler, Center for Advanced Study in Behavioral Sciences*

. . . poor educational achievement and other outcomes.

—Herbert Walberg, University of Illinois at Chicago

. . . the fact that so many children (poor children and children of color) are not being adequately educated in our public schools. There is no denying the evidence on this. The success stories are exceptions. *—Kenneth Zeichner, University of Wisconsin*

If you have an interesting question or an educational leader that you would like to bring to our attention, please contact: Gregory J. Marchant, Educational Psychology, Teachers College, Ball State University, Muncie, IN 47306.

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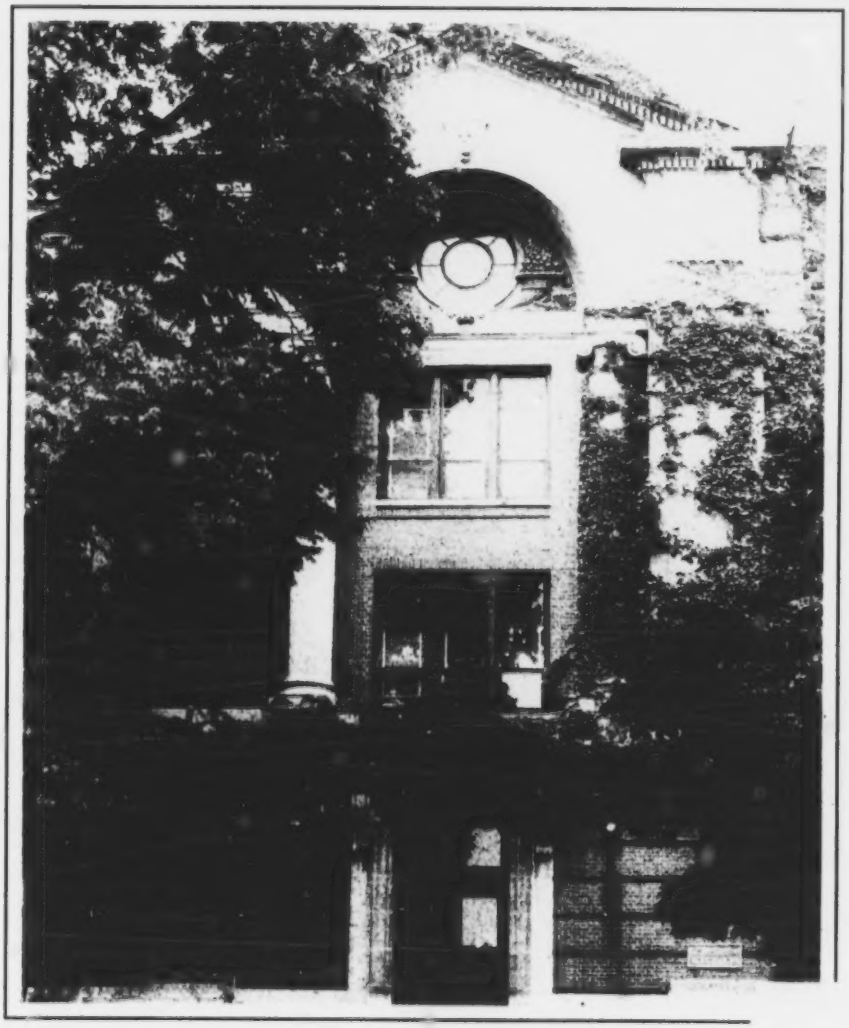

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Welcome to the new *Mid-Western Educational Researcher,* formerly the *MWERA Researcher.* We are very excited about the changes and additions that have been made in the publication and hope that you will enjoy the new format. As the official publication of the Mid-Western Educational Research Association, we will continue to bring you information concerning the Association. In addition, we hope to provide you with interesting features and especially hope that you will consider contributing to the publication by submitting articles, news, and ideas.

One of the first changes that you have probably noticed is the cover. Each issue features a sponsoring institution on the cover and a brief description of their education program inside. An important addition for the publication was the addition of an editorial board. This distinguished group of educators have been instrumental in providing direction and ideas, and assist in the review of manuscripts. Each issue also contains an interview with a leader in education, as well as the "Voices in Education" section, which reports the responses of a number of noted educators to important questions facing our field. Research articles and other articles of interest to the membership are also included. A special pull-out section designed to provide members with guidelines and forms for submitting proposals for the MWERA Annual Meeting October 16-19, 1991, has been included.

Although we have instituted some changes, the success of the journal rests with the membership. It is our hope that you find this journal useful and that it will help to draw new members to the Association. However, the publication cannot succeed without your contributions and feedback. We need good quality manuscripts for publication. We need feedback, criticism, and innovative ideas. We have been encouraged by the interest and support of the membership and hope that you will view the *Mid-Western Educational Researcher* as an interactive vehicle for your ideas and needs.

Information for Contributors to the Mid-Western Educational Researcher

The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association,* 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 4, Number 2 Spring 1991

FEATURE

Gender and Supervision
By Charol Shakeshaft, Hofstra University
2

ARTICLES

1990 MWERA Presidential Address
(Catastrophe Theory and Catastrophes in China's Civil Service Examinations)—Part II
By Ayres D'Costa, The Ohio State University
5

1990 Annual Meeting a Success
Member-At-Large's Report
By E. Jane Williams, Member-At-Large
10

Call for Proposals
(Pullout section with guidelines/forms for submitting proposals for MWERA Annual Meeting)
11

The Ralph Nader of Education: An Interview with Robert Slavin
By Gregory J. Marchant, Ball State University, and Isadore Newman, The University of Akron
19

Preservice Teacher Attitudes Towards Computer Technology
(A Log-Linear Analysis)
By Ralph O. Mueller, Timothy H. Husband, Constantinos Christou, Angi Sun
23

Voices in Education
(Leaders in various fields of education respond to a common question)
28

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ON THE COVER

The Ohio State University College of Education. Founded in 1870, The Ohio State University is a comprehensive urban institution with more than 59,000 students and 4,500 faculty. It offers more than 8,000 courses in the arts, sciences, humanities, and all major professional fields. Through its learning centers, special programs, and research and development offices, the University serves not only the State of Ohio, but the United States and the international community, becoming one of our nation's largest academic and research centers.

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Gender and Supervision

By Charol Shakeshaft, Hofstra University

Communication and Feedback Patterns

Gender and gender expectations may partially determine how supervisors interact with those they supervise. For instance, research tells us that the sex of participants affects what is communicated and how it is communicated (Borisoff and Merrill, 1985). The same words spoken by a male supervisor have different meanings to male and female teachers. Conversely, an interaction between a female principal and a male teacher is not the same as an exchange between a female principal and a female teacher.

We know that men and women communicate differently and that they listen for different information (Borisoff and Merrill, 1985). It may be that in a supervisory conference in which a principal is discussing an instructional issue with the teacher, the woman participant is listening for the feeling and the man for the facts. It may also be, given what we know of the values that males and females carry into their jobs in schools, that the woman is focused upon an instructional issue or a matter concerning the child, while the man has chosen to discuss an administrative problem.

Dr. Shakeshaft is the Chairperson of Administration and Policy Studies and a Professor at Hofstra University. What follows is the luncheon speech she delivered at the annual meeting of the Mid-Western Educational Research Association in Chicago, Illinois, October 19, 1990. The text presented is greatly abridged due to space limitations.

Nowhere does the impact of gender on supervision become more evident than in the area of feedback. Men receive both more and more types than do women. Women are more likely to get non-evaluative feedback, or neutral responses. Men receive both more positive and more negative responses.

A 1987 study (Shakeshaft) found that male administrators are less likely to give direct feedback to females but more likely to give it to males. For instance, when a male subordinate makes a mistake or doesn't live up to the expectations of his boss, his supervisor tends to level with him, "telling it like it is." When a female errs, she often isn't even informed. Instead, the mistake is corrected by others without her knowledge. The results are twofold. For the male, learning takes place instantly. He gets criticism and the chance to change his behavior. He learns to deal with negative opinions of his work and has the option of improving.

Females often never hear anything negative, being given neutral or slightly positive cues even if their performance is less than ideal. This results in a woman's misconception of her abilities or at least the level of her performance. If she isn't directly told that her work is not meeting expectations, she has neither the opportunity to improve nor the opportunity to reassess her abilities.

In interviews with male superintendents and principals asking them why they didn't confront women with their misgivings and dissatisfactions, one of the major reasons that was given was the fear of women's tears (Shakeshaft, 1987). Most of the men were uncomfortable with the prospect of tears. When questioned about what they expected from men to whom they gave negative feedback, most anticipated anger. While none of the administrators in this study liked confronting anyone with negative feedback, the prospect of an angry response was easier to face than the prospect of tears. Male superintendents and principals said they didn't like to deal with angry subordinates, but that they had the skills to do so. They were much less comfortable with crying, and because of this discomfort most failed to give women important corrective feedback that would have allowed the women to improve their performance as educators.

This fear of tears led us to examine who cries and how often. What we found was that there is not a lot of crying in public schools, and that although women cry in front of supervisors slightly more than men, the difference in frequency is very small. However, women are reported to cry equally often in front of females and males while males only cried in front of women. Thus, we learn that it is the fear of tears—rather than overwhelming evidence of actual crying—that paralyzes male administrators.

The importance of this discussion about supervisory styles and feedback is that gender perceptions are influencing behavior and interfering with effectiveness. Because of our beliefs about who men are and who women are, many administrative actions are censored or changed depending upon with whom we are interacting. The issues are difficult for both men and women. Women must be aware of the feedback loop and try to determine if they are getting helpful evaluative information. Men, on the other hand, often perceive themselves in a "damned if you do, damned if you don't" position. If a man treats a woman as he does a man, he may be accused of being harsh or unfair. If he doesn't treat a woman in the same manner, he may be accused of not giving her helpful or corrective feedback. We need to examine our expectations about male and female behavior and confront the issue so that both men and women are as effective as they can be in a supervisory relationship.

Influence of Sexuality on Working Relationships

Another factor that may inhibit or interfere with the supervisory act is heterosexuality and our unspoken beliefs about men and women working together. In a study of the hiring practices of male superintendents (Shakeshaft, 1989), we asked them if they would hire a traditionally attractive female. We used the terminology "traditionally attractive" so that superintendents could make their own decisions not only about what was attractive, but also about what was attractive within the acceptable range of school administrators. Almost all of the superintendents in our study said, "Sure, I'd hire an attractive woman." When we asked for what job, almost all had her slotted for an elementary principalship. When we followed up and asked if these superintendents would hire this imaginary woman as an assistant superintendent, in a role that worked very closely with the superintendent, very few of the superintendents said they would. The issue for them was the combination of the intensity of the working relationship and the attractiveness of the woman. Most admitted that they felt uncomfortable in a close working relationship with an attractive woman.

The first reason for this lack of comfort was the superintendents' concern that school board members would see something unseemly in the relationship and that this perception would threaten their effectiveness with their boards. The second reason superintendents shied away from this hiring decision was their worry that it would cause marital friction and few wanted the additional stress of "trouble on the homefront" added to their already stressful lives. But the third reason, and the one that hurts women the most, is that most of the male superintendents said they wouldn't feel comfortable working closely with an attractive woman because these men weren't sure they wouldn't be sexually attracted to her. And if they were, it seemed like a no-win situation. If the superintendent were attracted to his female subordinate and she didn't return the feelings, the superintendent ran the risk of being charged with sexual harrassment. On the other hand, if she were similarly attracted, the superintendent's first two fears (school board disapproval and marital discord) might become reality. Thus, most of the superintendents concluded that it wasn't worth the risks to hire an attractive woman (and for many that translated into woman) into a position with which the superintendent worked closely.

Because of the lack of comfort men in school administration have with issues of sexuality, women have been advised to dress and act in ways that suppress or hide their own sexuality. Women's dress for success formulas are more like dress for sexuality than for any criteria associated with success. Men, on the other hand, are advised to wear "power suits," attire that has high sexual appeal among women (Shakeshaft, 1989).

Gender Differences in Expectations

Another example of gender differences and the possible effects on supervision might be found in a study done by Garfinkel (1988) in which he attempted to determine whether or not men and women superintendents conceptualize their administrative teams differently and whether or not these superintendents and their team members value different traits in team members. Garfinkel found that both men and women value competence and trust, but that they give each a different priority. For women superintendents, competence is the first thing they look for in a team member; trust is lower on the list. Men superintendents, on the other hand, identify trust as their number one criteria for team membership, and view competence as less important. To complicate matters, especially for team members, men and women define trust differently. Men, both superintendents and team members, are more likely to describe trust as the "ability and comfort to say what they wished to say, confident that the persons they were sharing their thoughts or opinions with would not ridicule or repeat these thoughts elsewhere." (Garfinkel, 1988, p. 311). Women superintendents defined trust as "an expectancy held by an individual, that the word, promise or written statement of another individual or group can be relied on." (p. 311).

Earlier research (Shakeshaft, 1987) had indicated that for women: (1) relationships with others were more central to all actions than they were for men; (2) teaching and learning was more often the major focus than for men administrators; and (3) building community was more often an essential part of the woman administrator's style than it was for the man.

(In a content analysis of written evaluations of female teachers by principals) We did find some differences in the things that women and men focused on. Women were more likely than men

(continued on page 4)

to encourage the empowerment of their teachers, to establish instructional priorities, to be attentive to the social and emotional development of the students, to focus on student relationships, to be attentive to the feelings of teachers, to include more "facts" in the evaluation, to look for the teachers' personal effects on the lives of children, to place emphasis on the technical skills of teaching, to make comments on the content and quality of the educational program, to provide information gathered from other sources, to involve the teacher in decision making, to issue other directives for improvement, to provide immediate feedback on performance, and to emphasize curricular programs. Men, on the other hand, were more likely than women to emphasize organizational structure and to avoid conflict.

Summary

We would argue that gender makes a difference in how we behave as administrators. Sometimes these behaviors are just different and interesting. However, at other times they may signal treatment that is not only different but that is more favorable to one sex than to another. When the latter is the case, we need to re-examine practice.

How then, do we do this? We would suggest that first we might examine ourselves. All of us have been raised in a sexist society; therefore, it is not surprising that we have ideas about what women and men can do and be, about how males and females act, and about how to treat men and women. The first step is to acknowledge our backgrounds and training. Understanding that we had no control over what we were taught by society, school and family, but that we do have control over our actions today is a good first step. One way to gauge whether or not we are applying different expectations and standards to any situation is to substitute a member of the other sex in any scenario we are involved in. For instance, if we are working with a man and wonder if we have lowered our expectations, we might pretend he is a woman and consider how that person would be treated. Another way to examine what the differences mean is to transfer what we have learned about racism to male/female situations. When characterizing a woman in a particular way, consider whether we would say the same thing about minority people, and, if so, would we say it aloud in our community. Although racism is still strong, as a society we have become more cautious about expressing it publicly; we, as educators, have also become more able to identify it. We can use the models we have learned in one area to help us in another.

Working with school administrators around these issues is crucial if we are to change them. Research demonstrates that in-service education on these issues has gone a long way toward changing behavior (Grayson, 1988). For a very small investment in time and money, districts can reduce the negative effects of gender issues and enhance the positive ones. The result is an environment more supportive of teaching and learning.

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Presidential Address:

Catastrophe Theory and Catastrophes in China's Civil Service Examinations—(Part 2)

By Ayres D'Costa, The Ohio State University

Abstract

This is the second of two parts of the Presidential Address delivered on October 20, 1990, at the annual meeting of the Mid-Western Educational Research Association held in Chicago. The first part introduced the concept of catastrophe theory and was published in the Volume 4, Number 1. It is the intent of this second part to identify the 'catastrophes' in the evolution of Chinese national examinations and thereby highlight the birth and demise of various models of competence that were utilized by the Chinese over a period of 4000 years.

Catastrophe theory analysis (see Part 1) begins by identifying the occurrence of major discontinuities, or catastrophes, in a system such as civil service examinations. It requires the positing of a few major conflicting forces, and examining their effect on the examinations system using available historical evidence of the time. In this article the available 4000-year Chinese chronology is divided into six major periods based on five critical transitions in the purpose and process of the civil service examinations system. Each pair of adjacent periods is separated by a catastrophe, which is in a sense a critical transition. Although descriptive studies of China's examinations have been previously conducted (e.g., DuBois, 1980), this study goes further by identifying the major catastrophes in China's long history of civil service examinations, analyzing how socio-political forces interacted to produce these catastrophes, and suggesting how each catastrophe affected the nature and impact of subsequent China's civil service examinations.

Along with innovations such as gunpowder, printing, and tea, China deserves credit for having developed the world's first civil service system (Teng & Fairhanks, 1954). There is strong historical evidence to believe that China is also the first country in the world to have utilized a national examinations system to select its civil service officers. Although there have been a few minor periods of interruption in administering the examinations, China holds the world's record for the longest number of years over which such exams have been conducted, and for the largest number of candidates who have been examined in this manner. In a recent report, the Chinese State Education Commission (1986) indicated that its national examinations are held at some 53,000 sites and require over 100,000 invigilators (proctors). In 1978, a record six million students took the College Entrance Exam (Pepper, 1983).

A study of China's civil service examinations from a catastrophe theory perspective should be of interest to measurement professionals in the United States not only because of the long and intense commitment of the Chinese to standardized tests, but also because of the political crises the examinations have caused and the violent transitions or catastrophes through which they have evolved. Each catastrophe, and the new testing system that developed subsequently, demonstrates the power that social and political forces can have on tests and testing practice.

Methodological Approach

The methodology of this study utilized qualitative historical data to identify the catastrophes and their relevant critical variables. The data for this study and their interpretation were obtained from published sources and from interviews with Chinese educators, but the responsibility for the synthesis and the inferences was that of the author (an extensive bibliography that goes beyond the references cited in this study is available from the author).

In this analysis we will go back through time almost as many years before the Christian era as we are now after it. As history unfolds itself forward from ancient times, new topological forms will become evident as old ones self-destruct. Our structures will relate to emperors, political leaders, governmental bureaucracies and officials, educational systems, and most importantly, the vast sea of people struggling to find identity for themselves within this system. A few will succeed, most will be lost to oblivion. Our study will focus on one institution—China's national examinations. For convenience, the distinction between civil-service-related national examinations and higher-education-related national examinations will be ignored, although it does exist.

Catastrophes in Chinese Examinations

We will now present an overview of the five major catastrophes which divide China's 4,000-year history flow of national examinations into six periods. Depending upon the type of catastrophe that occurred (e.g. flight versus fight, using Lorenz's example of aggression in dogs presented in Part 1 of this article) there resulted a dramatic change in the nature and

(continued on page 6)

purpose of the civil service examination. This is reflected in the competency criteria required by the exams during the subsequent period. The specific catastrophe and its resulting competency criteria represent the important dependent variables of this study. Two powerful and conflicting socio-political forces will be identified as the independent variables for each period. As a result of their interaction, a specific type of catastrophe occurred leading to a dramatic change in the competency criteria expected by the examination.

Recall that in Part 1 of this article, we identified a specific geometric form (see Figure 1 below), namely the cusp, as relevant to a system with two independent variables and one dependent variable. The catastrophe analysis presented here is limited to the evaluation of various cusp-like shapes over the 4,000-year history, thereby restricting the analysis to two conflicting forces and one type of catastrophe in two possible contrasting modes. The two conflicting variables presented for each period may be thought of in terms of Lorenz's example of rage versus fear in a dog. Then one may decide whether the catastrophe mode that occurred represented fight or flight.

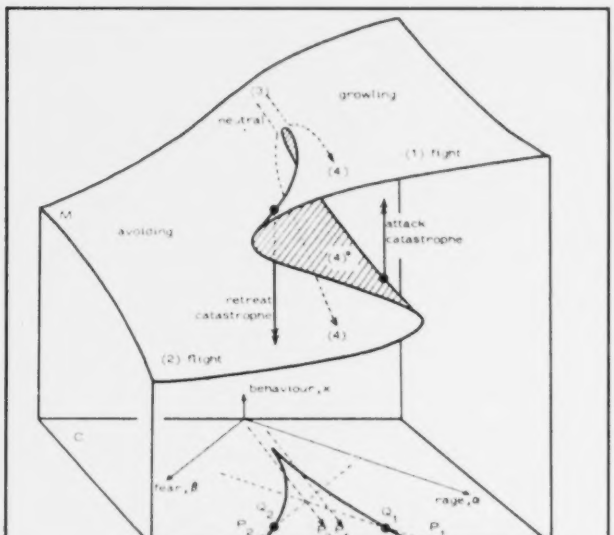

Figure 1—*The cusp-catastrophe illustrating fear and rage as conflicting factors influencing aggression (reproduced with permission from Zeeman, 1977, p. 6).*

Each period is labeled in terms of the prevailing and resulting competency criteria and identifies the two conflicting independent variables. The interaction of these two forces and the resulting catastrophe are documented using historic evidence. Descriptive phrases indicate the intensity and level of the interacting forces.

Critical Transition Points in China's Civil Service Examinations History

1. From Good Warriors to Scholar Officials.

DuBois (1965) noted that testing practices were recorded in China as early as the reign of Emperor Yao and Emperor Shun (2367–2206 B.C.). Emperor Shun examined his officers every three years. After three such examinations, they were either promoted or dismissed from service. The State Education Commission of the Peoples' Republic of China (PRC, 1986) identifies the Chou (Zhou) dynasty as establishing the Gongshi system. In order to ensure their power base, these rulers used a multi-level system to select officers for the government. Selection proceeded from the level of Xiangxue (county) to Guoxue (province) to the Taixue (nation). The selection criteria at this time were primarily based on moral conduct and military feats. The candidates were typically the eldest sons of warlords and senior officials, and rarely talented citizens.

After almost 2,000 years of recruiting civil service officers from the ruling classes, China appears to have undergone a cataclysmic change as a result of the teachings of Confucius (551–479 B.C.). Although not officially a religion like Christianity, Confucianism has been the most important single force in Chinese life (World Book Encyclopedia, 1979, p.764). Confucius overcame the military tendencies of the ruling classes and produced the first catastrophe favoring genteel conduct over military strength. It marks the *first* transition point in this presentation.

Confucius was deeply influenced by the constant warfare among the many states that made up China of his day. He feared that this threat to orderly social life would lead to the destruction of civilization. He emphasized gentlemanly behavior, which meant reverence in worship and respect for one's father and for one's ruler. Emperors were bound by these same rules of conduct. The Qin and later Emperors were quick to recognize the value of Confucianism to their political stability and strength (Kracke, 1953, p. 21).

> *The dependent variable, influencing the type of the exam introduced by the Emperor, was his desire to be strong and protective of his power based on the support of a chosen circle of key officials. During this period the purpose of examinations abruptly changed rom "good warriors" to "scholar officials.*
>
> *The two conflicting variables were competitive lords seeking position for their sons through military skills, and Confucian ideals of order and gentlemanliness.*

Confucian thought prevailed and resulted in a dramatic change in the nature of the exam, from its original focus on military feats to a new order emphasizing genteelness and scholarliness.

Catastrophes *(continued)*

2. From Sponsored Scholar Officials to Tested National Scholars.

The period 221 B.C. to about 618 A.D. introduced the significance of the 'scholar official' in the Chinese empire. Thousands of 'literati' were sponsored and attracted for service in the various feudal kingdoms. As power, privilege, and status were accrued to such scholars, the local examinations and the sponsoring recommendations became corrupt. Family status, rather than a candidate's virtues or talents, would often determine who was recommended. Sometimes a person was recommended as a Xiucai (literary talent) without knowing a single Chinese letter or word (Kracke, 1963, p. 26).

A new battleground was in place in China. The influential lords, recognizing that the Confucian system was there to stay, began to corrupt the new exam system in order to serve their own ends. The Reform Movement of Shangyang (344 B.C to 605 A.D.) was concerned about these abuses and attempted to standardize the sponsorship/recommendation process, which was ultimately abolished by the Sui dynasty in 587 A.D. The Imperial Examinations System was initiated in 606 A.D. in order to ensure fairness in the selection of worthy Confucian scholars as officials of the Emperor. This serves as the second major transition in this presentation. Of special significance is China's dedication to social equity along with Confucian scholarship.

> *The dependent variable, or the goal of the national examinations, remains the Emperor's desire to retain power using the dominant Confucian thinking prevalent in the nation.*
>
> *The two conflicting variables were the lords' desire to assure their family of state privileges through the national exam versus the new national demand for fairness in the selection process.*

China's national sense of fairness prevailed. An Imperial exam system was set up with the final selection conducted directly by the Emperor.

3. From National Scholars to Westernized Urban Elites.

The Tang dynasty (618–907) recognized two levels of exams, one at the prefecture (provincial) level, and the second conducted by the Ministry of Rites (which included the present-day Ministry of Education). The Sung dynasty (960–1279) added a final Imperial examination presided over by the Emperor himself. In the Ming (1368–1644) and Qing (1644—1911) dynasties there were four levels of examinations, adding a pre-prefecture or local-level examination.

Passing the pre-prefecture exam led to the title of Xiucai. The prefecture exams conferred the title Juren, the Ministry exams the title Gongshi, and the final Imperial exam the title Jinshi. The top three candidates were additionally known as Zhuangyuan, Bangyan, and Tanhua.

Exam content was well defined and eventually dominated the curriculum in schools. Literary writing and political argumentation became the mark of the Jinshi. The candidate was also expected to have mastered the five classics (*Books of Songs, Rites, Changes, Spring Annals,* and *Autumn Annals*), as well as law, calligraphy, and mathematics. The form of the examination involved filling in the blanks (Tiejing), answering questions orally or in writing, writing poems on assigned topics, writing political discourses, and expounding the truth presented in a single-sentence statement by writing an essay (Jingyi). This exercise was heavily dependent upon memorization of the Chinese classics, and because of the required structure became invidiously known as the eight-part or eight-legged essay.

The Imperial examination system lasted about 1300 years, until the Chinese were deeply humiliated by their defeat by Western forces during the Opium Wars of 1840. There followed severe criticisms of the eight-legged essays (Teng & Fairbanks, 1954), and the need to 'learn the strong techniques of the barbarians (Westerners) in order to control them.' The 1898 Reform Movement urged the abolition of the civil service exams because 'they were an obstacle to China's growth and security.' The Imperial exams were abolished by Imperial decree on September 2, 1905, which serves as our *third* transition point.

> *The dependent variable, or the purpose of the exams, switched to the Imperial concern for national security against Western forces based on their technological superiority.*
>
> *The two conflicting variables were the long-standing literary dominance of Confucian learning, versus the reality of the humiliating defeat of Chinese Imperial forces by technologically superior Western military and naval forces during the Opium Wars.*

4. From Westernized Urban Elites to Rural Proletarian Intellectuals.

Shocked into recognizing the need for technical knowledge and military skills, China's leaders abolished the scholarly Confucian Imperial exams and called for the introduction of Western and Japanese technology through foreign languages, military science, ship-building and navigation. These new subjects provided the new emphases in the reformed Chinese civil service exams. Science and technology became the dominant new segment of the school curriculum. With Western influence came the downfall of the long rule of Chinese Emperors and the start of the Freedom Revolution by Dr. Sun Yat-Sen and his Kuomintang (KMT) party.

Anxious to modernize China, the KMT emphasized higher education, science and technology, and education abroad. This resulted in power accumulating in the urban elite, and the neglect/alienation of the rural masses. The country was up for a new revolution. The Japanese invasion of China in 1937 and China's role in World War II with the Allies resulted in the strengthening of the Chinese Communist Party (CCP) led by Mao

(continued on page 8)

Zedong (also spelled as Mao-tse-tung). Mao, although influenced by Confucian emphasis on personal motivation and practical performance, condemned Confucian learning and book-worship. His focus was on the 'proletarian.' Moral and intellectual competence was insufficient without political commitment for the rural masses.

Mao's theory of knowledge, in his speech "Rectify the Party's Style of Work," identified only two kinds of knowledge—that related to the country's struggle for production, and that related to its class struggle (Taylor, 1981, p.7). Practical experience and collective study were emphasized. Education was now integrated with village labor and commune-based study. Mao's rise to power with the establishment of the people's Republic of China (PRC) in 1949 served as the *fourth* transition point in the history of China's civil service system.

A totally new national purpose was created for the national exam as a result of this catastrophe. National security interests, rather than power for the Emperor or his elite few, served to become the major purpose of the new exams and the dependent variable for this period.

The two conflicting forces at work in China were the urban elite who had studied abroad and brought back foreign values, versus the rising power of Mao's Communist Party with the avowed purpose of strengthening the power of the rural masses.

5. From Proletarian Intellectuals to Communist Party-Based Modernization Experts.

Chinese Communists became the first rulers of unified China in 1949. Their notion of the *'proletarian intellectual,'* though rooted minimally in a traditional generalist ethic, focused on the social, economic, and technological needs of their revolution. Intellectuals were judged not by their knowledge or expertise, but by their commitment to the party's social goals. All efforts were directed towards Mao's Great Leap Forward. This was to be the first step towards the ultimate formation of the class-less society, theoretically an antithesis of the typical elitist civil service system.

Despite Mao's promise of the class-less society, the Chinese Communist Party (CCP) found itself unable to dislodge the power of the Civil Service Examination System. Mao-style reform of the system became inevitable. Mao emphasized a first-stage process of recommendation and selection for the national examination by peasant leaders at the local level. Additionally, middle school graduates had to spend two years in village labor before applying for entry into higher education. Political qualifications thus became critical for entry into the selection stream. In practice, however, because of the many selection steps, the high degree of selectivity, and the intrinsic power of the intellectuals, even this Mao objective broke down. Real competition did in fact occur. Each selection was supervised by local cadres, and educational institutions often added their own admissions criteria. Thus the political power of the workers/peasants became diffused, albeit frustrating (Taylor, 1981, p.38).

It was the failure of the Great Leap Forward through the CCP's collective model that brought on new tensions between moderates and radicals. Nevertheless, blame for China's lack of progress was assigned to uncooperative intellectuals and elites. It was alleged that these groups had frustrated Mao's ideological dream to transfer political control to the peasant workers.

Thus was born the Cultural Revolution (1966–1976) and the ensuing chaos that destroyed China's educational, technical, and cultural structures. Interestingly, it also damaged the CCP's Party structure and brought all progress to a virtual standstill. All national exams were suspended as also all forms of higher education. The Cultural Revolution is our *fifth* (and last for now) transition point in the history of the examinations.

This period saw the demise of the national exam and all forms of learning associated with it. The dependent variable defining national excellence and competence was articulated in terms of how well the Proletarian goals of the Communist Party were met.

The two Competing forces of this time were the public dissatisfaction with the Communist Five-Year Plans, versus the Party's determination to preserve its control over the Chinese people.

6. From Communist Party Oriented Modernization Experts to Nation Oriented Experts.

The Cultural Revolution lasted ten years and the devastation it left behind in China could not be ignored despite the Communist stranglehold on the Chinese people. Traditional patterns of education and of examining competence have reappeared since 1977. Leaders, like Chou-en-Lai and Deng Xiaoping, argued strongly for China's need to uplift the economic plight of its masses through technological development. The Four Modernisations (agriculture, industry, defense, and science/technology) have become the new slogan for the nation. In order to promote 'excellence,' key inventions and 'key' schools have been set up. The word 'key' denotes special or promising. National competition for admission into higher education is once again based on achievement examinations administered on July 7, 8, 9 each year. Candidates choose between the liberal arts track, and the science/technology track. A new form of elitism seems to have emerged with urban students performing better on the exams than rural students, especially in the so-called 'hard' sciences.

Nonetheless Mao-style communist ideology still prevails and is evident through the enrollment quotas. These are used to ensure equity for the 21 provinces, which are clearly unequal. Mao's policy of favoring persons with peasant background also appears to have become confounded with the requirement to send all

urban senior secondary youth for rural service. All youth now have some peasant background, although not born in rural areas.

Meanwhile, the scarce opportunities for leadership are being sought through keen competition in the national exams. Complaints abound that the exams have inappropriately influenced high school curricula. As one letter to the Editor of *China Daily* put it, "these tests emphasize book-learning and memorization (Baiping, 1986)." These trends continue to the detriment of creativity (Swanson & Zhian, 1987). There is concern that the national exams are too limited in scope, and rigid in their reliance on a simple indicator like a total test score. There is not enough effort to broaden the basis of the exams, or to enhance the complexity of their scoring and interpretation. As the old centralized system is being unceremoniously dismantled, care needs to be taken to ensure that the sixth catastrophe ushers in national examination goals that are in the best interests of the Chinese people.

The dependent variable of interest is now economic self-sufficiency and international competitiveness. Exams are now expected to serve this new goal.

Yet China retains its conflicting forces. One force favors Communist-style proletarianism, and the other recognizes that the Chinese economy cannot be salvaged without modernization and capitalistic reforms. There has been no catastrophic outcome yet, although the Tiannamen Square revolt came close to being one.

Conclusion

This study illustrates how the goals, content, form, and process of exams can be influenced by social and political forces. Competence, over the 4,000 years of Chinese history has come to be defined as military prowess, Confucian-style scholarship, Western-style military expertise, proletarian intellectualism, and modern industrial expertise. There is no doubt that such disparate definitions of excellence came into being because of catastrophes. It would appear from the Chinese experience that major examination changes are related to catastrophic occurrences, and that an analysis of catastrophes helps understand why the process and criteria of examinations changed over time.

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1990 Annual Meeting a Success:

Member-At-Large's Report

By E. Jane Williams, Member-At-Large

This year's conference was bigger and better than ever. We had the largest attendance of any MWERA conference, (N=322), and there was a better respond rate from participants when asked to evaluate sessions (42 percent of sessions were evaluated in 1989; 57 percent were evaluated in 1990) than for the 1989 conferences. An attempt was made to evaluate the conference as a whole in addition to the paper sessions, however, very few responses were returned, i.e., less than 20. Consequently, this paper will only summarize the session evaluator results.

This was the second year that the evaluation was conducted for the paper sessions. The paper sessions for the 1990 MWERA conference were evaluated using the instrument developed for the 1989 conference. Like last year, the results will be used by the 1991 Program Chair in designing the 1991 conference. Respondents were asked to rate each presentation on clarity, organization, and interest and note if a paper was provided as well as rate the quality of the overall session on organization, adequacy of facilities, coordination of topics, amount of time for questions/discussion, and how well questions were answered. All items, except for noting if a paper was provided, were rated on a 5-point scale ranging from strongly agree to strongly disagree. Copies of the instrument were distributed to Session Chairs via their registration packets. Session Chairs were asked to have participants complete the evaluation forms at the end of the session and turn them into the Session Chair prior to leaving that session. The Session Chair then returned the completed forms to the registration desk, where they were picked up by the Member-At-Large. All responses were anonymous. Only overall results will be presented here. If presenters of papers desire individual feedback, they may contact the Member-At-Large.

Completed forms were returned by 286 participants, evaluating 39 sessions. The number of respondents, mean, and standard deviation for each category evaluating the overall session are included in Table 1. The overall means ranged from 4.29 (topics were coordinated) to 4.58 (session was very well organized) with respective standard deviations of 0.89 and 0.59.

Table 1

Number of Respondents, Mean, and Standard Deviation for Overall Session Categories on MWERA '90: Session Evaluation Form

CATEGORY	N	MEAN*	SD
The session was very well organized	282	4.58	.59
The facilities were adequate	286	4.31	.89
The topics were coordinated	283	4.29	.89
There was adequate time for questions/discussion	277	4.51	.84
Questions were answered adequately	270	4.57	.62

*Note: Items were rated using the following scale: (5) Strongly Agree, (4) Agree, (3) Undecided, (2) Disagree, (1) Strongly Disagree.

The majority of comments by participants reflected the feeling that they were pleased with the sessions and that the sessions were well organized. Many commented that discussants did a good job. An area of major concern was the need for overhead screens. Additional constructive and useful suggestions made by multiple respondents included the following comments, which related mainly to specific presentations and sessions: there should be stricter guidelines for paper acceptance; use roundtable format when papers do not group together well rather than forcing them into a session; paper presenters should be required to provide a paper or at least an outline of their presentation; presenters should not simply read a paper, but explain, expand, clarify, and/or develop the topic; presenters must show a greater depth in the review of the literature in relationship to the topic; and save the time block from 5 to 6:30 p.m. for MWERA business/association council meetings—paper sessions should end at 5 p.m. Overall, responses indicate that respondents were pleased with the program and presentations.

Top 10 Reasons for Attending the MWERA Annual Meeting

(from the Home Office in Lincoln, Nebraska)

10. You don't have to teach classes.
9. Home furnishings sale at Marshall Fields.
8. Free drink coupons at the Bismarck.
7. Personally challenge sleep deprivation findings.
6. Model new winter wardrobe.
5. Ride Chicago subway to get ideas for Halloween costumes.
4. Play nose flute in Ayres D'Costa's ragtime band.
3. Deepdish pizza.
2. Hear papers rejected for presentation at AERA.
1. Sketch out ridiculous research ideas on Bismarck cocktail napkins.

from Kenneth A. Kiewra, MWERA Keynote Speech, October 18, 1990, Chicago, IL.

MID-WESTERN EDUCATIONAL RESEARCH ASSOCIATION

CALL FOR PROPOSALS

1991 ANNUAL MEETING • OCTOBER 16-19, 1991 • CHICAGO, ILLINOIS

MWERA 1991 Annual Meeting

October 16–19, 1991

Plans for the thirteenth annual meeting of the Mid-Western Educational Research Association are under way. There are several new activities. There will be a featured presentation Wednesday night. **Joel Levin,** editor of the *Journal of Educational Psychology*, will speak about publishing educational research. Dr. Levin will also present the keynote address Thursday morning. In addition, there will be a featured presentation Thursday afternoon. **Annemarie Palincsar,** University of Michigan, will discuss effective instruction.

Other new events include exhibits by publishers, a "Meet the Journal Editors" session, a "Midwest in Jest" session, featuring spoofs of educational research, and a Saturday morning Fun Run.

Several important events/activities will continue. We are honored to have as our luncheon speaker **Carole Ames,** University of Illinois at Urbana-Champaign. Dr. Ames will discuss student motivation. Back for a second year, by popular demand, is **Roger Bruning,** providing piano accompaniment for the Cracker Barrel Social.

The most important part of the 1991 conference though is **YOU!** We need your ideas and research presented at the annual meeting. We also need you to pass the word about how wonderful the MWERA conferences have been. Please tell people about MWERA and the 1991 program and encourage them to join the organization and submit a proposal.

Kenneth A. Kiewra, 1991 Program Chair

CALL FOR PROPOSALS

1. **GENERAL INVITATION FOR PARTICIPATION**

You are cordially invited to attend and participate in the Thirteenth Annual Meeting on October 16–19, 1991, at the Bismarck Hotel in Chicago, Illinois.

CONFERENCE HIGHLIGHTS:

WEDNESDAY, OCTOBER 16

- Training Workshops.
  Concurrent sessions starting at noon and 3:30 p.m.
- Special Night Session, 8 to 9 p.m.
  Speaker: **Joel Levin,** Editor, *Journal of Educational Psychology*
  Topic: Tips for Publishing and Professional Writing

THURSDAY, OCTOBER 17

- Keynote Address, 10 a.m.
  Speaker: **Joel Levin,** University of Wisconsin-Madison
  Topic: Pictorial Strategies for Learning and Instruction
- Special Afternoon Session, 5 to 6 p.m.
  Speaker: **Annemarie Palincsar,** University of Michigan
  Topic: Educational Research: Implications for Instruction
- Evening Social, 6 to 8 p.m.
  Piano music by **Roger Bruning,** University of Nebraska
- "Midwest in Jest" Spoofs of Educational Research

FRIDAY, OCTOBER 18

- Business Meeting
- Luncheon
  Speaker: **Carole Ames,** University of Illinois at Urbana-Champaign
  Topic: Motivation
- Exhibits
- Meet the Editors
  The editors of several major journals will display and discuss their journals.
- President's Reception, Bismarck Regency Suite, 9 p.m.

SATURDAY, OCTOBER 19

- MWERA Fun Run

II. GENERAL INFORMATION

A. Proposals may be in the form of scholarly papers, symposia, workshops, or other innovative formats. *Deadline: Must be postmarked by May 1, 1991.* All proposals will be peer-reviewed.

B. Any educational researcher, whether MWERA member or not, may submit a proposal. Nonmembers whose papers and/or symposia are accepted for presentation must join MWERA upon notification of an accepted proposal.

C. MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals. Unless expressly prohibited in writing by the author(s), summaries may also be made available to the press or other interested parties upon request. Such limited distribution does not, of course, preclude subsequent publication of a summary or complete paper by the author(s).

D. All persons attending the Annual Meeting, including participants, are required to register for this meeting and be members of the Mid-Western Educational Research Association. All sessions listed in the program will be open to anyone registered for the meeting. A small fee will be charged, and enrollment may be limited for Training Workshop participation. Materials for registering for the Annual Meeting will be published in the *Mid-Western Educational Researcher.*

E. Participants in paper sessions and symposia must distribute handouts to attendees at their sessions. Paper presenters are expected to have a written paper available for prior review by the Session Chair and Discussant. Papers may also be submitted to ERIC for limited distribution to the profession. This does not preclude formal publication in a journal. ERIC forms will be available at the Conference Registration desk.

F. We are attempting to have overhead projectors available in every meeting room for use by presenters. No other audio-visual equipment will be provided. If special audio-visual equipment is needed, the presenter will have to provide his or her own equipment.

III. GUIDELINES FOR PAPER PROPOSALS

A. General Information About Paper Proposals

1. Only papers not previously presented or published are eligible.
2. The Program Committee will group papers into sessions, organized by topics of interest to the conference. The Program Committee may, at its discretion, include a discussant to critique the papers in any particular paper session.
3. Generally, papers will be alloted 15 minutes per presentation. It will be the responsibility of the Session Chair to consult with the presenters, allocate time, and ensure that the agreed schedule is followed.
4. It is the responsibility of the presenting author of an accepted proposal to appear at the Annual Meeting to present the paper. If unforeseen circumstances arise that prevent an author from presenting a paper, it is his/her responsibility to arrange for a suitable substitute to make the presentation, discuss the arrangements with the Session Chair, and notify the Annual Meeting Program Chair:

   Kenneth A. Kiewra, 1307 Seaton Hall, University of Nebraska, Lincoln, NE 68588-0641, 402-472-3233.

B. Material to be Submitted with a Paper Proposal

- Paper Proposal Cover Sheet (3 copies). See attached form.
- Summary (3 copies of a 2 to 3 page summary typed single-spaced on 8½x11 paper). The Summary will be used in judging the merits of the proposal. It should contain as many of the following guidelines as are applicable.
  a. Title of Presentation
  b. Objectives
  c. Perspective(s) or theoretical framework
  d. Methods, techniques, or brief literature review
  e. Data source (if appropriate)
  f. Results, conclusions, or point of view
  g. Educational/scientific importance of the study

  NOTE: Only the Title of the Paper should appear as identifying information at the top of the Summary. Please do not include name or institutional affiliation, in order to permit blind review.
- Abstract (3 copies). A 100- to 200-word narrative Abstract should be prepared for publication in the Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the above guidelines for the two- to three-page Summary. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. Abstracts should be typed single-spaced on 8½x11 paper. An abstract longer than 200 words is not guaranteed publication.

  One copy of the Abstract should show the title and name(s) of the author(s) typed flush to the left margin, in the format below:

  Title of Paper (caps and lower case)
  AUTHOR(S) (ALL CAPS), Institution(s) (caps and lower case)

  The other two copies should show Title of Paper, but no Name or Institutional affiliation in order to allow a blind review.
- Envelopes (3 self-addressed, stamped, business-size envelopes). These will be used to inform you of (1) the receipt of the proposal, (2) the decision of reviewers, and (3) the scheduled session time.
- Index Cards (three 3x5 index cards). These should be prepared as follows:
  Name of presenting author (last name first)
  Complete mailing address (with zip code)
  Telephone number (with area code)
  Title of presentation

IV. GUIDELINES FOR SYMPOSIUM PROPOSALS

A. General Information About Symposium Proposals

A Symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. In addition to allowing for informative discussion, a Symposium should provide for presentation of alternative solutions or interpretations either of a common problem or in relation to a complementary theme. This purpose is best served when individuals with diverse or conflicting views are allowed to interact on a topic of sufficient scope and importance. It should be noted that a Symposium should not be merely a presentation of a set of related papers. While such complementary papers are clearly worthwhile, they should be submitted as individual papers with an indication of suggested grouping on the Cover Sheet.

(continued)

B. Responsibilities of Organizers of Symposium

It is the responsibility of the Symposium Organizer to suggest topics and solicit speakers and discussants. Organizers of symposia must have the consent of all participants before submitting the proposal. Organizers not wishing to chair the session must invite chairpersons. The Organizer of a symposium is responsible for ascertaining that each person named as a participant will be present at the meeting if the session is accepted. Should unforeseen circumstances prevent a participant from attending, it is the responsibility of the Organizer to find a suitable replacement and notify all other participants in the session as well as the MWERA Annual Meeting Program Chair. In addition, it is helpful for the participants and the discussant(s) to have prior access to summaries of each presentation so that they may be able to formulate their remarks in the context of what the others plan to say.

Only the Organizer will be notified of acceptance of a Symposium, and she/he is responsible for notifying other participants in the Symposium.

C. Materials to be Submitted with a Symposium Proposal

- Symposium Proposal Cover Sheet (three copies). See attached form.
- Summary (3 copies of three- to five-page summary typed single-spaced on 8½x11 paper). The summary will be used in judging the merits of the proposal. It should contain as many of the following guidelines as are applicable.
  a. Title of Presentation
  b. Objectives of the symposium
  c. Educational or scientific importance
  d. For each presentation, include a one-page overview
     Title of presentation
     Objectives
     Perspectives and/or methods
     Data source (if appropriate)
     Results, conclusions, or point of view

  NOTE: Please do NOT show the Name or Institutional affiliation of the presenters on this Summary, in order to allow a blind review.
- Abstract (3 copies). A 300 to 400 word, narrative abstract should be prepared for publication in the Meeting Abstracts. The Abstract should represent, in abbreviated form, the information contained in the three- to five-page Summary. Use clear, precise language and avoid abbreviations that might be confusing to readers unfamiliar with your field. Abstracts should be typed single-spaced on 8½x11 paper. Be sure that one copy has the following information at the top left margin of the page:
  Title of Symposium (Caps and lower case)
  ORGANIZER (ALL CAPS), Institution (Caps and lower case)
  CHAIRPERSON (ALL CAPS), Institution (Caps and lower case)
  PARTICIPANTS (ALL CAPS), Institutional affiliation (Caps and lower case)

  Two copies of the Abstract should NOT show any Name or Institutional affiliation, in order to allow a blind review.
- Envelopes (3 self-addressed, stamped, business-size envelopes). These will be used to inform the Organizer of (1) receipt of the proposal, (2) the reviewers' decision, and (3) the scheduled session time.
- Index Cards (three 3x5 index cards). These should be prepared as follows:
  Title of symposium
  Name of organizer (last name first)
  Complete mailing address (with zip code)
  Telephone number (with area code)
  Name of symposium chairperson, if different from organizer (last name first)
  Complete address (with zip code)
  Telephone number (with area code)
- Three copies (8½x11) of a list of all participants in the symposium, their presentation title, and their mailing addresses. The chairperson, presenters, and discussant(s) should be included in this list.

V. GUIDELINES FOR TRAINING WORKSHOP PROPOSALS

A. General Information About Training Workshop Proposals

Proposed workshop topics should be of interest and use to a number of MWERA members. Presenters will receive an honorarium based on the number of participants attending the workshop. All persons listed as presenters are required to appear at the conference and present the workshop at the designated time. All workshops will be on Wednesday, October 16, 1991, either starting at noon or 3:30 p.m. Some workshops may be offered twice. Workshop proposals should be sent to the Training Workshop Coordinator, Stephen Benton (see address below).

B. Materials to be submitted with a Training Workshop Proposal

- Cover Sheet (Use Symposium Proposal Cover Sheet. See attached form.) Send two copies with all items complete. Strike out the word "Symposium" and write in "Workshop." Indicate the total amount of time you believe will be needed. Please note that in special circumstances a workshop may be allocated more than three hours.
- Summary (3 copies of a two- to three-page summary typed single-spaced on 8½x11 paper). This will be used to judge the proposal. The summary should include information such as the following.
  a. Objectives (knowledge, skills for participants)
  b. Suggested entry-level skills for participants
  c. Educational or scientific importance of the topic
  d. Perspectives, orientations, or theoretical framework
  e. Methods or techniques of instruction
  f. Description of presenter's relevant experience
- Abstract (3 copies). A 100 to 200-word, narrative Abstract should be prepared for publication in the Annual Meeting Abstracts. This should briefly describe the objectives, content, and methods of the workshop. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. Abstracts should be typed single-spaced on 8½x11 paper. An abstract longer than 200 words is not guaranteed publication. For all copies of the abstract, the title of the workshop and presenter(s) should be typed flush to the left margin, in the format below:
  Title of Workshop (Caps and lower case)
  PRESENTER(S) (ALL CAPS), Institution (Caps and lower case)
- Envelopes (3 self-addressed, stamped, business-size envelopes). These will be used for notification of receipt of the proposal, the reviewer's decision, and the scheduled session time.

- Index Cards (three 3x5 index cards). These should be prepared as follows:

  Name(s) of Workshop presenters (last name first)
  Complete mailing address (with zip code) of contact person for the workshop
  Telephone number (with area code) of contact person
  Title of Workshop

  Mail Workshop Proposal to 1991 Workshop Training Coordinator: Stephen L. Benton, Department of Educational Psychology and Counseling, Bluemont Hall, Kansas State University, Manhattan, KS 66506.

VI. "MIDWEST IN JEST"

There will be a spoof session. No fooling. Submit completed work relevant to any area of educational research to Ken Kiewra, Ottoman, 1307 Seaton Hall, University of Nebraska, Lincoln, NE 68588-0641.

VII. ADDITIONAL INNOVATIVE FORMATS ARE INVITED

Session formats for the Annual Meeting are not necessarily limited to those listed above (i.e., papers, symposia, and workshops). Innovative formats (e.g. poster sessions or roundtables) are encouraged and will be considered. If you wish to propose an innovative format, please submit details by May 1 to the 1991 Annual Meeting Program Chair, Kenneth Kiewra, 1307 Seaton Hall, University of Nebraska, Lincoln, NE 68588-0641.

VIII. WHERE TO SUBMIT PROPOSALS

Proposals for PAPERS and SYMPOSIA are to be submitted with a postmark of no later than May 1, 1991, to one of the following Division Chairs. Choose the Division that reflects the topic of your paper most appropriately.

DIVISION A: ADMINISTRATION—Concerned with research, theory, development, and improvement of practice in the organization and administration of education.

Dr. Wenifort C. Washington
College of Education
Zook Hall 426
The University of Akron
Akron, OH 44325-4206 .....Phone: 216-972-7764

DIVISION B: CURRICULUM AND STUDIES—Concerned with curriculum and instructional practice, theory, and research.

Dr. Sarah E. Peterson
Educ. Psych., Couns. and Spl. Educ.
Northern Illinois University
Dekalb, IL 60115 .....Phone: 815-753-8471

DIVISION C: LEARNING AND COGNITION—Concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors.

Dr. Greg Schraw
Educational Psychology
1308 Seaton Hall
University of Nebraska
Lincoln, NE 68588-0641.....Phone: 402-472-6944

DIVISION D: MEASUREMENT AND RESEARCH METHODOLOGY—Concerned with measurement, statistical methods, and research design applied to educational research.

DIVISION D *(continued)*

Dr. Leslie E. Lukin
Educational Psychology
16 Hill Hall
University of Missouri
Columbia, MO 65211 .....Phone: 314-882-1310

DIVISION E: COUNSELING, HUMAN DEVELOPMENT AND SPECIAL EDUCATION—Concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies.

Dr. Alvin Leung
Department of Educational Psychology
120 Bancroft Hall
University of Nebraska
Lincoln, NE 68588-0345 .....Phone: 402-472-6948

DIVISION F: HISTORY AND PHILOSOPHY OF EDUCATION—Concerned with the findings and methodologies of historical research in education.

Dr. Nelson T. Strobert
162 Gordon Avenue
Gettysburg, PA 17325 .....Phone: 717-334-6386

DIVISION G: SOCIAL CONTEXT OF EDUCATION AND MOTIVATION—Concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development.

Dr. Joan S. Timm
Educational Foundations
College of Education and Human Services
University of Wisconsin-Oshkosh
Oshkosh, WI 54901 .....Phone: 414-424-1490

DIVISION H: SCHOOL AND PROGRAM EVALUATION—Concerned with research and evaluation to improve school practice, including program planning and implementation.

Dr. Richard C. Pugh
2513 Buttonwood Lane
Bloomington, IN 47401.....Phone: 812-855-9832

DIVISION I: PROFESSIONAL AND MEDICAL EDUCATION—Concerned with educational practice, research, and evaluation in the professions (e.g., medicine, nursing, public health, business, law, and engineering).

Dr. Patricia B. Mullan
3291 Bluett
Ann Arbor, MI 48105 .....Phone: 313-936-1647

DIVISION J: POSTSECONDARY EDUCATION—Concerned with a broad range of issues related to two-year, five-year, and graduate education.

Dr. William E. Loadman
287 Arps Hall
The Ohio State University
Columbus, OH 43210 .....Phone: 614-292-3239

DIVISION K: TEACHING AND TEACHER EDUCATION—Concerned with research on teaching, conditions of teaching, the teaching profession, and the preparation and development of teachers.

Dr. Charlene M. Czerniak
College of Education
University of Toledo
2801 W. Bancroft Street
Toledo, OH 43606 .....Phone: 419-537-2094

PAPER PROPOSAL COVER SHEET

1991 MWERA Annual Meeting

Please print or type

1. Paper Title _____

_____

2. Presenting Author _____
LAST NAME FIRST NAME MI

Affiliation _____

Mailing address _____

Work phone ( ) Home phone ( )

3. Coauthors [List name(s), institutional affiliation(s)]

_____

_____

_____

_____

4. If you wish to have this paper grouped in the same session with other papers submitted to the convention, please attach a separate sheet listing presenting authors and titles of the other papers.

5. Are you a member of MWERA? ☐ Yes ☐ No

Please note that all presenters must be current members of MWERA at time of presentation and must register for the Annual Meeting.

I hereby certify that, if this paper is accepted and placed on the program, I will register for the Annual Meeting, appear, and deliver the paper.

_____
SIGNATURE DATE

Be certain all of the following are enclosed:

THREE SETS OF MATERIALS, STAPLED TOGETHER, EACH CONTAINING ONE OF EACH OF THE FOLLOWING:

- Paper proposal cover sheet
- Two- to three-page Summary
- 100 to 200-word Abstract (to appear in the Meeting Abstracts)
- Self-addressed stamped envelope
- 3x5 index card with author's name, address, telephone number and presentation title.

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY MAY 1, 1991.

SYMPOSIUM PROPOSAL COVER SHEET

1991 MWERA Annual Meeting

Please print or type

1. Symposium Title _____

_____

2. Organizer _____
LAST NAME FIRST NAME MI

Affiliation _____

Mailing address _____

Work phone ( ) Home phone ( )

3. Participants. Please attach a *separate sheet* listing name, institutional affiliation, mailing address, telephone number, and title of presentation for each participant, including Discussant(s), Chair, and Organizer.

4. Chair (if different from Organizer)

_____
LAST NAME FIRST NAME MI

5. Time requested: ☐ 1 hour ☐ 1½ hours ☐ 2 hours

6. Are you a member of MWERA? ☐ Yes ☐ No

Please note that all presenters must be current members of MWERA at time of presentation and must register for the Annual Meeting.

I hereby certify that, if this symposium is accepted and placed on the program, all presenters of this symposium will register for the Annual Meeting, and be responsible for its presentation. I hereby declare that I have assurances from the other participants that they will register and make their respective presentations.

_____
SIGNATURE DATE

Be certain all of the following are enclosed:

THREE SETS OF MATERIALS, STAPLED TOGETHER, EACH CONTAINING ONE OF EACH OF THE FOLLOWING:

- Symposium proposal cover sheet
- Three- to five-page Summary of the symposium
- 400-word Abstract (to appear in the Meeting Abstracts)
- Self-addressed stamped envelope
- 3x5 index card with symposium title, name, telephone number, and address of the Organizer and Chair
- List of all participants as per No. 3 above.

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY MAY 1, 1991.

EXECUTIVE COMMITTEE 1990-91

Immediate Past President
Dennis W. Leitner
Southern Illinois University

President
Ayres G. D'Costa
The Ohio State University

President-Elect
Barbara S. Plake
University of Nebraska-Lincoln

Vice President
Kenneth A. Kiewra
University of Nebraska-Lincoln

Secretary
Jay R. Price
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E. Jane Williams
Columbus Public Schools, Ohio

Executive Officer (ex officio)
Charles C. Anderson, Jr.
Educational Testing Service (Retired)

Co-Editors, Researcher (ex officio)
Gregory J. Marchant, Ball State University
Isadore Newman, The University of Akron

MWERA DIVISIONS

A: Administration
B: Curriculum Studies
C: Learning and Instruction
D: Measurement and Research Methodology
E: Counseling, Human Development and Special Education
F: History and Philosophy of Education
G: Social Context of Education and Motivation
H: School and Program Evaluation
I: Professional and Medical Professions
J: Postsecondary Education
K: Teaching and Teacher Education

MWERA ASSOCIATION COUNCIL (1989–91)

Donald R. Cruickshank, The Ohio State University
John Fraas, Ashland College, Ohio
Larry Gruppen, University of Michigan
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Sharon McNeely, Northeastern Illinois Univ.
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1990–92

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Mid-Western Educational Research Association

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the mid-western region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome.

The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The *Mid-Western Educational Researcher* is the official publication of the Association. The three issues published annually are mailed to all members. These issues include a report on the Annual Meeting, some of the major presentations, the Call for Proposals, and the Program for the Annual Meeting.

The Annual Meeting of the Association is held in the third week of October beginning with presessions starting on Wednesday at noon. The meeting is comprised of papers, symposia, and invited addresses concerning a variety of topics from the various MWERA Divisions. The 1991 Annual Meeting will be held at the Bismarck Hotel, Chicago, Illinois, October 16 through 19. *Contact the Program Chair for more information about the Annual Meeting:* Kenneth A. Kiewra, (402) 472-3233, 1307 Seaton Hall, University of Nebraska-Lincoln, Lincoln, NE 68588-0641.

The annual dues of $10 include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to:* Charles C. Anderson, Jr., (708) 564-4796, MWERA Executive Officer, 1332 Southwind Drive, Northbrook, IL 60062.

MWERA Membership Application

Name (first, mid. initial, last) _____

Mailing address _____

City _____ State _____ Zip _____

Home phone ( ) _____ Office phone ( ) _____

Highest degree _____ Area of specialization _____

Institution/employer _____

MWERA division preferences _____

_____

AERA member? _____

The Ralph Nader of Education:

An Interview with Robert Slavin

By Gregory J. Marchant, Ball State University, and Isadore Newman, The University of Akron

Robert Slavin has numerous publications in AERA journals and other top journals. He is a researcher who has been an early advocate of cooperative learning and has developed the "best evidence" approach to research synthesis.

N **Could you tell us something about your background, about how you got started in educational research?**

S I started out in the world as a psychology major as an undergraduate. But I was also very interested in education, and along the way I started working toward certification as a high school social studies teacher. I was getting my psychology degree at a small college, Reed College in Portland, Oregon, which required an undergraduate thesis. I had this real clever idea that I thought was never thought of in the history of the human race, to see whether it would be a good idea to have kids work in small teams—work in groups. I read something by James Coleman asking why was it that kids were so interested in sports and not at all interested in academics. I wondered it if might have something to do with the social structure of the classroom as opposed to the athletic social structure. In the athletic social structure your efforts benefit a team, which benefits the schools, so the peers encourage athletic excelelnce because it's in their interest to do so. In the classroom when somebody does well it reduces the chance that others will be successful. There are only so many A's to go around. So in the classroom, kids discourage each other from excellence, hard work, and so on. I was very impressed by that and was going to try to put it into practice. I wound up as an undergraduate working with my wife—well, she wasn't my wife then. Together we designed this program that involved kids working in small learning teams learning lab science. It turned out to be extremely successful. Then I went out and tried to get a job as a social studies teacher, and this was when there weren't any jobs. The whole state of Oregon must have had one job, and I didn't get it. So I spent a year teaching special education. It so happened that I knew something about this because every summer, as a summer job, I was working with retarded and autistic children. I taught special education for a while and then went to graduate school. The only place I knew of that knew anything about this cooperative learning notion was Johns Hopkins University. James Coleman was the only person I'd read about who knew anything about this, but he left the year I came. But it turns out there were some people who had been working with him, such as David DeVries. He had been working with Coleman on ways of having kids work in small groups. I sort of fell in with that work in the center that I work in now, and basically what happened is that I finished my program, my adviser left, I took his job, and I've been there ever since.

M **Why is cooperative learning working? I've never known a model that has caught on in classrooms on every level from elementary school through college. What is it about cooperative learning that has made it so popular, and what lesson is there for us for other kinds of strategies?**

S There is an interesting history, in that a lot of the cooperative learning that is being widely used now was completely developed, researched, and packed away by 1978 or thereabouts. There have been other models that have been developed since 1980, but the ones that are in widest use now had really been well-researched, well-documented, and well-developed long ago, and then 8 or 10 years later are all of a sudden as popular as the hula-hoop. I think that what happened was that in 1978 and into the early 80s we were more in the age of mastery learning, of Madeline Hunter, of trying to improve or patch up traditional teaching, as opposed to looking at more serious alternatives. I think that there are a whole lot of trends in the

(continued on page 20)

opposite direction now toward looking more broadly at innovative methods. So we had the advantage of being ready when the opportunity arose, because we had been working and refining cooperative learning methods, getting them right, and understanding what the basic principles were before the world was asking for them in large quantities. I think what's appealing about cooperative learning is that it allows you to pursue achievement goals, allows you to know that kids are going to do well on tests and all the usual accountability measures at the same time as you're achieving humanistic goals.

N **I see waves of fads in education. What you often have is rediscovering principles; they fade out, come back, fade out, and what seems to really work is just as likely to go out of favor as things that are not working.**

S I think that one part of what's happened is that teachers are seeing practical, replicable, feasible sorts of things that they can do in their own classrooms that also may happen to be effective. But as I think you're suggesting, the effectiveness of them is not the main explanation for why they're popular. They're popular because they solve a problem that schools are perceiving right now as being important. I chose the term "as popular as the hula-hoop" consciously because the hula-hoop was a fad. It didn't serve a long-term need. It was in and then it was out. I think, unfortunately, in education, that is the way innovation happens. Old things fall into disuse not because they are wrong, but because they are old. New things are used because they're flashy and new. The way we have staff development set up, is that we have staff developers who are not reinforced for choosing something effective, sticking with it for a period of years, seeing that the program is effectively used and is actually producing the differences that it's supposed to produce, and then institutionalizing it through a school system. They're rewarded for coming up with something that's new and interesting that will amuse and excite teachers and other staff. The role of data or research is rather limited. It's not zero, but it's limited. It has an indirect effect, because if there is good data, this influences some decision makers, some actors somewhere along the process so that it ultimately gets to teachers and promotes or retards the impact of the program. I wrote about the Madeline Hunter program in South Carolina as a good example of the limited impact of research. The few evaluations that were done on the Madeline Hunter program found zero effects from it. It's not a bad program. There's nothing wrong with it. It has some nice, interesting ideas, but as a program it was not evaluated, yet was mandated in state after state in one form or another. Not just, "Here's an interesting idea you might try," but mandated. I wrote about a particular case in South Carolina that was interesting because they commissioned a study of the program, and a very careful and thorough study found it had no impact whatsoever on student achievement. However, this didn't derail the process at all. There was still a commitment to move forward and have every teacher trained.

N **What can you suggest that a school system or a university should do in identifying, developing, and evaluating programs?**

S Clearly what school districts should be doing is trying to build some capability to evaluate and make decisions based on things that actually have a research background—that have some evidence of effectiveness, but then still evaluate them within their own districts. They should pilot on a small scale something that they're thinking about adopting, evaluate it very carefully against control groups, and then make a decision based on their own evaluations. You can't rely completely on testimonials from teachers about what helps their students because their perceptions are so bound up with their own qualities as teachers that can't be separated from the effectiveness of the program.

N **What qualities in research do you consider necessary for determining which studies present the "best evidence"?**

S I don't think you can point to any kind of generic set of qualities. What I was talking about when I was writing my best evidence synthesis was to try to identify what was the best evidence that we had on a particular topic. In some cases the best is not very good, in some cases the best is outstanding. As far as saying there's a minimum level that something has to achieve, would be kind of hard to do. I would strongly emphasize the use of control groups, some kind of clear evidence that the experimental and control groups were equivalent before the treatment was applied, and that the measurement was fair to both groups; in other words, it wasn't something that only applied to the objectives of the experimental group. Those three requirements would probably wipe out about 90 percent of educational research or more.

N **When is there enough research to establish the best evidence idea?**

S You can't wait until the evidence is perfect before writing reviews. It's useful to take stock about the path that you're on. The path never ends. You're never at the point of understanding that you want to be at. You need to under-

stand the setting conditions. You may say, such and such seems to be effective on average for students of this age and these general characteristics. Then you have to replicate it, but also you want to find what limiting conditions exist. You may find, "OK this may work in classes of this kind or that kind, but it doesn't work with classes of this systematic kind, or teachers of this kind or that kind."

N **I don't see people doing that type of research. They just seem to stop and generalize. I don't see those types of limiting factors being investigated or reported.**

S No, but I think that our problem is that we're not even getting to stage one of identifying the larger strategies that make a difference. Only when we know the overall effect can we go on to stage two, three, or four, which is to start identifying a lot of the setting conditions studying small variables. Wait-time for instance is very problematic because it's too small of a piece and too contextually bound a piece of the total instructional process to be able to be studied in practical experiments. You need to take something bigger like cooperative learning, mastery learning, mastery teaching, individualized instruction, ability grouping, or departmentalization because they are less totally context bound. When you pick out something as small as wait-time or a particular questioning strategy, it is too bound with the context of the teacher, of the students, and of the relationship between them. Also, its impacts are likely to be very modest, but impacts can aggregate. In other words, the impacts of lots of these little things may be big news, but each one of them alone is not going to make huge differences in student achievment.

M **Your approach to investigating topics such as Bloom's mastery learning and Madeline Hunter make you appear to be a critic or a consumer protection advocate. What determines what topics you pursue?**

S The Ralph Nader of education? Well, what I'm mainly trying to do in my research life is to answer one simple question, which is: What works for student achievement? And particularly, what works in the sense of things that can be transported and replicated. I have a particular interest in what works for kids who are not typically well served by the school system—disadvantaged kids, special education kids, Chapter I kids. I have a real leftover 60s belief that the world should be a whole heck of a lot different from what it is, and that there's a large category of kids who are getting in very, very deep trouble very early and this is something that's unacceptable. Whenever there's something listed in the AERA program that has "has effects on" in the tile, I'll write for it if they seem to have any kind of potential at all for affecting student achievement. I've got reviews that are percolating all the time, because I'm trying to satify myself. I'm convincing myself about which way to go on each of these kinds of solutions. I get close to things like mastery learning, not because I want to shoot them down, but because I was attracted by many aspects of mastery learning and I wanted to understand what its effects were. Actually, I did a study of mastery learning with Nancy Karweit back in the late 70s hoping and expecting that mastery learning was going to be very effective and that we could enhance its effectiveness further by combining it with cooperative learning, which mastery learning people had often talked about. In our study we found out that the mastery learning component of what we were doing wasn't adding anything to achievement, and as we got into the literature, we realized that we weren't the only ones finding this. So I got close to it because it was an appealing idea, not something I wanted to get rid of.

M **If you had control over a teacher education department and you were able to come up with three rules or three statements: I want all teachers to know this about research, I want all teacher education people to know this about student learning. What would those three or four statements be?**

S I just don't know if it can be boiled down like that. I can tell you the obvious kind of things, such as that teachers need to have a range of effective lesson presentation strategies. They need to know something about classroom management, particularly proactive-preventative management, such as how to organize classroom events so that the management problems are not a drag on the success of the teacher. They need to have some understanding about how they're going to deal with individual differences in the classrooms, whether they're going to use grouping strategies, or how they're going to accommodate the range of students they've got. They've got to have some clear sense about how they're going to motivate students, how they're going to make them want to learn things that they're presenting.

N **I think one of the problems is that we don't teach teachers to be researchers (in a global sense, not in a specific sense). A good researcher is a person who asks good questions and is interested in asking questions because they want answers.**

(continued on page 22)

S An educational psychology text or a methods text can't give and shouldn't be giving teachers pat answers or a bag of tricks. It needs to raise the issues you need to consider. I give an example in my text of this where there's a kid in the class who's clowning around and the teacher is now considering a series of alternatives. What he's considering is theories and then actions related to those theories. Theory 1 might be this kid's clowning around because he's bored or frustrated, so he wants to disrupt the activity. The solution is to change the lesson, the topic, or whatever. Possibility 2 might be that he's trying to get the attention of the rest of the class. They're laughing. That's an indication that their laughter is maintaining the behavior, so the solution might be to tell the kids that they can earn extra recess if the whole class is well behaved, so the kids will put pressure on the kid to stop clowning around. Possibility 3 is that the kid doesn't realize that the class really has norms that favor appropriate behavior in the classroom, so maybe the solution is to discuss what the class rules are and to discuss the idea of what the class is for. The teacher is like a detective in a sense. The teacher has theories for this particular case. The teacher's got some evidence, such as the other kids laughing. That's important information. The teacher pieces together little bits of information that give an understanding of what the child is doing. I think teacher educators must be working on two different things. They've got to be working to develop the teacher as researcher or as detective, but you've also got to give them some theories, some evidence, and possibilities to consider and accept or reject as the situation requires.

M **What do you think of the expert-novice studies on teachers?**

S I think that expert-novice studies can be helpful in showing something about what does happen; what kinds of things do develop over teachers' careers. They don't always show you what *should* develop however. I find the process-product studies on effective teaching, which have a lot in common with expert-novice studies, to be more productive in terms of things directly relevant to classroom practice. If there were a substantial correlation between teaching experience and instructional effectiveness, then expert-novice studies would be a lot more interesting. But since there isn't, then I think chances are that among a group of first-years, there's a subgroup of teachers who are a lot more effective than the average experienced teacher, and studying what these teachers are doing is more productive than studying what experienced teachers are doing.

N **What criteria do you think should be considered to assess teacher effectiveness?**

S An effective teacher is primarily one who helps all children achieve to their full potential. To answer a given question about how you enhance student achievement, of course, achievement tests are what you want. The problem is that the achievement tests that have been used have been too limited. They've been standardized measures, group administered, not much problem solving, no higher order thinking skills. But in concept, if you measured the full range of what achievement should be, and looked at teacher behaviors in relationship to their success in getting kids successful on a much broader-based measure, that's what I think would be an ideal research of that kind. But if you had additional interests, as you should have, you'd also look at process-product research on teachers who are able to enhance student self-esteem, or teachers who are able to enhance student participation, or any number of other kinds of criteria that just haven't been done, but there's no reason why they couldn't be done.

M **What's next for Robert Slavin?**

S The thing that's taking most of my time right now, and I've been working on with many other people as well, is a program called "Success for All." It is a program that is meant to try to make sure that kids don't fall behind in the first place, that they are successful the first time they're taught, and then maintain that success through the elementary grades. It has many elements and there are many other forms of it now, but the program involves effective preschool and kindergarten programs, one-to-one tutoring for kids who are having difficulty in first grade, a radical change in the beginning reading program to try to increase the chances that students will be successful the first time, family support programs to deal with attendance, health, help for students that need but don't have glasses, and so on. We're implementing this program right now in about 11 schools, with the number gradually increasing over time. We're seeing some striking effects on student achievement, and I think that what we're going to be able to say soon is: every kid can read, absolutely every single kid, with very few exceptions for organic problems. Just about every kid, regardless of disadvantage, regardless of home background and so on, can be successful in reading if we're willing to invest in them and we're willing to provide the most effective programs that we have.

(continued on page 27)

Preservice Teacher Attitudes Towards Computer Technology:

A Log-Linear Analysis

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Abstract

Computers have achieved recognition as powerful tools in elementary and secondary curricula due to their potential for improving instruction and learning. However, if computers are to be utilized effectively, it seems appropriate to address the attitudes towards computers among students preparing to become teachers. In this study, data from 1,164 preservice teachers from 13 Michigan colleges and universities were analyzed. Log-linear techniques were employed to investigate sex and certification (elementary, secondary) differences and their possible interaction in attitudes towards computers. The analysis indicated both sex and certification differences in overall positive attitudes of preservice teachers towards computers. Professionals in teacher education programs may benefit from re-evaluating how they are training different groups of preservice teachers in the most effective use of technology. Greater exposure to computers might further increase students' attitudes, which in turn might enhance their effectiveness in the classroom.

Introduction

In the early 1970s, as a result of technological advances connected with the U.S. space project, hand-held calculators and computers became widely available and reasonably inexpensive. In 1980, the National Council of Teachers of Mathematics (NCTM, 1980) endorsed the integration of computers into the classroom. Today, the educational community is still trying to determine the best way to meet this recommendation.

In recent years, computer education has been given an increasingly high priority in initial teacher training in western countries (Summers, 1988). For example, many postsecondary institutions ensure that new preservice teachers encounter computer education in their freshman year, usually offered in the form of computer orientation courses. As a result, some research studies focused on the computer experiences teacher-education students (preservice teachers) should have when they start their college coursework (Gooler, 1989; Koohang, 1986; Summers, 1988). However, preservice teacher attitudes toward these experiences, as well as toward the incorporation of computers into the elementary and secondary curriculum, have not been studied in detail. The literature that exists suggests that there is very little agreement on the general attitudes towards computer instruction among preservice teachers (Becker, 1982; Hawkins, 1984; Price & Brunson, 1986; Summers, 1988; Vermette, Orr, & Hall, 1986). Computers are being introduced into classrooms in increasing numbers. The ultimate decision as to whether or how they will be used is generally left to the individual teacher (U.S. Congress, Office of Technology Assessment, 1988). Positive teacher attitudes towards computing, therefore, are critical if computers are to be effectively integrated into the elementary and secondary curriculum.

As schools take steps to purchase computers, teachers need to be properly prepared and trained in order to feel confident and use computers effectively. Some preservice teachers tend to see computers as complex machines and do not anticipate success in using them (U.S. Congress, Office of Technology Assessment, 1988). More than 40 percent of the preservice teachers who participated in a study by Summers (1988), started their college experience with negative and nervous feelings toward computers. There is evidence, however, that teacher perceptions of, and attitudes toward, computer applications can be improved with certain training programs (McDermott, 1985). Dickey and Kherlopian (1987) reported that most teachers believe that the amount of computer experience has a positive effect on attitude toward computers. Hawkins (1984) indicated that negative reactions to computer experience come mainly from females. By contrast, Vermette, Orr, and Hall (1986) did not find significant differences between male and female teachers who responded to an attitude inventory. These conflicting results suggest that sex differences, as they relate to attitudes towards computers, merit further investigation. Additionally, sizable differences in attitudes toward computers may exist between elementary and secondary teachers (Summer, 1988). For example, Lichtman (1979) found that elementary teachers generally were less likely than secondary teachers to see computers as improving education.

If sex differences in attitudes exist, they must be identified and addressed. Sizable differences in attitudes toward

(continued on page 24)

51 BEST COPY AVAILABLE

computers between elementary and secondary teachers might suggest a need for different teacher training programs in colleges and universities for each group. The present study examined the attitudes of preservice teachers towards the use of computers in the classroom. More specifically, based on evidence in the literature (Becker, 1982; Dickey & Kherlopia, 1987; Summers, 1988), it was hypothesized that:

1. For preservice teachers, there is no statistically significant interaction between sex and certification with respect to attitude towards computers.
2. Male preservice teachers have a more positive attitude towards computers than female preservice teachers.
3. Secondary preservice teachers have a more positive attitude towards computers than elementary preservice teachers.

Method

Participants Several states have established guidelines for the use of technology (including computers) in the elementary and secondary curriculum as well as guidelines for teacher preparation in these areas (U.S. Congress, Office of Technology Assessment, 1988). In 1988, a task force was established under the direction of the Michigan Department of Education to examine alternatives for incorporating technology training into teacher preparation programs. This task force conducted the Computer Experience Survey (CES) of 1,164 students from 13 colleges and universities in Michigan; 1,081 preservice teachers provided usable responses (817 females and 264 males). The average age of respondents was 26 years with a standard deviation of 6.7 years. The majority were seniors (70 percent), pursuing a teaching certificate in elementary education (53 percent). Forty-four percent of the respondents were secondary education majors, with the four most frequent areas of specialization being science (19 percent), social science (18 percent), English (17 percent), and mathematics (16 percent).

Instrumentation The Computer Experience Survey (CES) (Technology Training for Michigan's Preservice Teachers, 1989) was designed to measure preservice teachers' levels of experience with computers and their attitudes about the use of computers in education. For the purpose of this study, only the attitude portion of the survey was used. The participants were asked to rank their opinions on 21 attitude items using a scale of 1 to 5, where 1 indicated strongly agree, 2 indicated agree, 3 indicated neutral, 4 indicated disagree, and 5 indicated strongly disagree. To enhance interpretability, the scale was reduced here to three mutually exclusive categories. Scores of 1 and 2 were combined to indicate agreement (Category 1) and 4 and 5 were combined to indicate disagreement (Category 3). A score of 3 indicates neutrality (Category 2).

Three of the 21 attitude items were used for the present analysis. The selection was based on the current belief that human functioning, in general, has a cognitive (thinking), emotional (feeling), and behavioral (acting) dimension (Ellis, 1982; Hutchins, 1982, 1984; Ward, 1983). In particular, attitudes are formed by interpreting and using information from the thinking, feeling, and acting components of behavior. Thus, three items from the CED were selected that each corresponded to one of the attitude dimensions. "*Computer use enhances student* learning" *(LEARN)* was selected as an item from the cognitive domain; "*Computers make me* uneasy" *(UNEASY)* was used to represent the feeling domain; "*I intend to* use *computers in my teaching*" *(USE)* was used to represent the acting domain of respondents' general attitude toward computers. Although justified by theory, the selection of only these survey items might have biased the outcomes. That is, results might change if different items were used for the analysis. This should be kept in mind when evaluating the results and implications.

Statistical Analysis Due to the categorical/ordinal nature of the variables (sex, certification, attitudes), a logit analysis was conducted. For a detailed introduction, consult Hagenaars (1990) or Kennedy (1983). Briefly, a logit analysis consists of two main model selection steps. First, *residual* maximum-likelihood-ratio chi-squares (L^2's) are examined. Residuals are defined as differences between respective observed and expected frequencies. Starting with the saturated model, models are hierarchically examined until a significant L^2 is found. Since a model with a significant residual L^2 does not fit the data well, this model, and in general, all more restricted models, are eliminated from further consideration.

During the second step of model selection, the *component* L^2's are examined. Component L^2's are differences between pairs of residual L^2's. The component L^2's provide the means to determine which specific effects (or groups of effects) are contributing to the improvement of the fit between the observed and expected frequencies. The model associated with the first significant component L^2 is a candidate for selection and all less parsimonious models generally can be ignored. Results from these two steps usually indicate the single model that best fits the data.

Results

Table 1 shows the cross-classification of the participating service teachers across the two explanatory variables (SEX and CERTIFICATION) and the attitude variables (USE, UNEASY, and LEARN).

Table 1

Contingency table for the attitude variables USE, LEARN, and UNEASY vs. sex for elementary and secondary preservice teachers.

	MALE	FEMALE	TOTAL
	ELEMENTARY		
AGREE	45 (44) [11]	451 (437) [97]	496 (481) [108]
NEUTRAL	9 (9) [11]	78 (82) [118]	87 (91) [129]
DISAGREE	1 (2) [33]	4 [15] [317]	87 [17] [350]
TOTAL	55 (55) [55]	533 (534) [332]	588 (589) [587]
	SECONDARY		
AGREE	151 (144) [34]	217 (212) [44]	368 (356) [78]
NEUTRAL	45 (57) [43]	54 (64) [45]	99 (121) [88]
DISAGREE	13 (57) [132]	13 (64) [194]	26 (121) [326]
TOTAL	209 (209) [209]	284 (283) [283]	493 (492) [492]

Note. The values represent the number of subjects in each cell. Top number refers to variable USE; frequencies in ( ) refer to variable LEARN; frequencies in [] refer to variable UNEASY.

The LOGLINEAR procedure of SPSS-X (SPSS-X User's guide, 1988) was used for the model selection. For each attitude variable, an analysis was conducted using the logit technique suggested by Kennedy (1983). The results of these analyses are displayed in Table 2. Note that the procedures followed below were previously outlined in the methods section. For more detailed information regarding model selection in logit analyses, consult Kennedy (1983).

For the attitude variable USE, the null and sex models were eliminated due to significant residual L^2 values ($p=.000$ and $P=.001$, respectively). No sex x certification) interaction was found as indicated by a non-significant component L^2 ($p=.9010$). Finally, the certification model was associated with the first significant component chi-square ($L^2=18.95$; $p=.001$) implying significant main effects for the certification variable.

Table 2

The effects of sex and certification on variables USE, LEARN, and UNEASY.

	RESIDUAL			COMPONENT		
MODEL	L^2	df	p	L^2	df	p
Null	28.96 (16.94) [7.35]	6 (6) [6]	.000 (.010) [.290]	134.54 (165.44) [164.71]	1 (1) [1]	.0000 (.0000) [.0000]
Sex	19.16 (9.50) [7.32]	4 (4) [4]	.001 (.050) [.120]	9.8 (7.44) [.03]	2 (2) [2]	.0073 (.0242) [.9851]
Certification given Sex	.21 (.23) [1.12]	2 (2) [2]	.901 (.892) [.572]	18.95 (9.27) [6.2]	2 (2) [2]	.0001 (.0097) [.0451]
Saturated	.00 (.00) [.00]	0 (0) [0]	1.00 (1.00) [1.000]	.21 (.21) [1.12]	2 (2) [2]	.9010 (.8920) [.5718]

Note. Top value refers to variable USE; value in ( ) refer to variable LEARN; value in [] refer to variable UNEASY.

Note that this model selection process provided no information regarding concurrent sex effects. However, a significant component chi-square associated with sex ($L^2=9.8$; $p=.0073$) suggested that differences between male and female preservice teachers exist regarding their intentions to use computers in the classroom.

A similar analysis of the attitude variable LEARN was used to eliminate all except the certification model, implying main certification effects. Also, the component chi-square for sex ($L^2=7.44$; $p=.0242$) indicated significant sex differences in preservice teacher opinions regarding the question of whether computer use enhances learning. For the variable UNEASY, however, the selection process lead to three (null, sex, and certification), rather than a single well-fitting model. The sex model was eliminated due to a non-significant component L^2 ($p=.9851$). A significant difference in chi-square test (Kennedy, 1983, p. 134) between the remaining two models ($L^2_{(\text{Null-Certification})} = 7.35 - 1.12 = 6.23$; $p=.0451$) lead to the selection of the certification model.

Discussion

The purpose of this study was to examine the attitudes of male and female preservice elementary and secondary teachers towards computers. Based on the studies by Becker (1982), Dickey and Kherlopia (1987), and Summers (1988), it was hypothesized that there was no sex x certification) interaction and that males and secondary preservice teachers had a more positive

(continued on page 26)

attitude towards computers than females and elementary teachers. The results of the study, however, might warrant some different conclusions. First, it is encouraging to note the overall positive attitude of preservice teachers towards computers in the classroom. Tremendous technological advances in hardware and software development over the past two decades have clearly increased the use of computers in educational settings. Results indicate that previously observed attitude discrepancies across sex and certification levels seem to have diminished, even though some statistically significant differences can still be found. It should be noted that statistically significant results might be due, in part, to a relatively large sample size which increased the statistical power of the logit analysis.

Specifically, no sex differences were found with respect to the attitude variable UNEASY—a result consistent with Vermette, Orr, and Hall (1986)—while statistically significant differences were observed in the other two variables (USE and LEARN). Female teachers had slightly more positive attitudes than their male counterparts with regard to the use of computers in the classroom and the computer's impact on learning. For example, 79.4 percent of the female participants—vs. 71.2 percent of the male students—agreed that computer use enhances student learning. These results somewhat contradict findings by Becker (1982) and Hawkins (1984), who concluded that males had more positive attitudes toward computers than females.

Students of elementary education showed more positive attitudes on the variables USE and LEARN than their peers in secondary education, seemingly contradictory results by Lichtman (1979). Specifically, 84.4 percent of the elementary preservice teachers—vs. 74.6 percent of the secondary teachers—intended to use computers in their teaching. However, the effect of certification was reversed for the variable UNEASY, that is, 66.3 percent of the secondary, and 59.6 percent of the elementary students disagreed that computers made them feel uneasy.

Inconsistencies with previous investigations could be due to several factors:

1. In this study, a different instrument was used to measure attitude. In our opinion, attitude may not be uni-dimensional but may be composed of several factors, and different instruments may be measuring different components of attitude. The present study attempted to isolate three components of human functioning (thinking, feeling, acting; Hutchins, 1984) that are likely to affect a person's attitude. It is quite possible that different results would have been obtained if different items were used to represent the three dimensions of human behavior/attitude.

2. The rapid growth of the implementation of technology into education—and into society in general—might have affected present attitudes of preservice teachers. Computers are more readily available and they are generally easier to use. With change occurring so rapidly, it seems reasonable to expect positive attitude changes within only a few years, as suggested by the results of this study. The positive change in attitudes of females may also be due, in part, to the effects of such organizations as the National Council of Teachers of Mathematics (NCTM) which has made a concentrated effort to especially encourage females to pursue mathematics/computer-related careers (NCTM, 1980).

3. Presently strong positive attitudes of elementary education students toward computers might be due to their "generalist" orientation, while specializations in areas such as history or social studies might have contributed to the somewhat less positive attitudes of secondary education students.

Results of this study could have several implications for both, preservice teachers and college of education administrators and faculty. First, possible sex and certification differences in attitudes towards computers illustrate potential problems in the implementation of computer training programs for preservice teachers. Teacher preparation institutions might consider developing comprehensive preservice programs to meet the unique needs of women and men, as well as elementary and secondary education students. Second, teachers' attitudes toward computers could be related to their effectiveness in the classroom. Research suggests that increased familiarity with computers tends to reduce general computer anxiety (Koohang, 1986). Thus, university curriculum changes reflecting more computer exposure might relieve students' anxiety, which in turn could improve teacher effectiveness.

General teacher attitude plays an important role in the educational process. Specifically, attitudes toward the use of computers need to be evaluated to successfully implement technological advancements into the classroom (Stevens, 1982). In 1989, Michigan's Preservice Technology Task Force addressed, in part, the needed evaluation of preservice teachers. Results of the present study confirm their conclusions. Preparations that future teachers receive in colleges and universities will most likely affect whether or not they will actually use computers in their classrooms. Therefore, teacher preparation institutions should encourage their students to acquire and update necessary skills to implement new technology into their classrooms.

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Preservice Teacher Attitudes (continued)

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An Interview with Slavin (continued from page 22)

M **Is there support for programs such as this, not only among educators, but financial support as well?**

S I think so. Right now there's a lot of willingness to consider expensive things if you're sure they'll work. If you're really sure that they'll make a difference. People are investing millions in things like *Writing to Read*, in preschool programs, and extended day kindergarten programs, and in other programs which are very expensive. Of course the long-term savings are obvious: reduced special education, reduced retentions, and reduced need for continued remedial services. But even those kinds of things aside, I think that there's getting to be a fair acceptance among legislators, the general populace, as well as educators that if we could find things that really would prevent learning problems from developing, then that's a legitimate investment. Even if the investment may be large. I may be wrong about that, but I think it's worth exploring to outline the dimensions of what life could be like or what the school system could be like if we did take the achievement, the success of every kid, as being an entitlement, something that the school can guarantee.

Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

What major mistake(s) do you believe have been made that have brought us to our present condition in education?

They are too numerous to mention. Among the most obvious and common are (1) the politicizing of American education (whereby adhering to political criteria and standards is more important that adhering to educational criteria and standards, and taking credit for programs becomes more important than developing credible programs), (2) the victory of opinion over evidence (with researchers divided into their little "camps" being their own worst enemies—one is reminded of Al Capp's Pogo), and (3) the failure to learn from our mistakes (in regard to Silberman's *Crisis in the Classroom* is as appropriate today as it was in 1970 or 1971).

—Lorin Anderson, University of South Carolina

School curriculum is boring for adolescents.

—David Berliner, Arizona State University

(1) Insufficient support for, and promotion of, teacher professionalism, innovation, and collegiality, (2) Insufficient support for trying out new ideas in the classroom. (3) Too great a focus on accountability for performance on standardized tests.

—Hilda Borko, University of Maryland

Centralization, specialization, and self-inflicted problems of scale, coupled with an undue emphasis on efficiency and production-system thinking.

—Christopher Clark, Michigan State University

Continuing the status quo without critical examination of its strengths and weaknesses.

—Lyn Corno, Teachers College Columbia

(1) Lack of serious attention to the plight of the inner city poor. (2) An over-emphasis on standardized achievement test scores (and later, economic achievement), so school contexts tend to be too pressuring and not personally supportive.

—Edward Deci, University of Rochester

Too many short-term panaceas have been proposed by both educational technicians and political policymakers. The field as a whole has not helped the public understand what is required to create a genuinely educational program in our schools.

—Elliot Eisner, Stanford University

Education has *not* been seen as a professional field based on a dynamic and ever-expanding knowledge base. Rather, it has been seen as an institution where practice is based on artistic interpretation and tradition.

—Thomas Guskey, University of Kentucky

A preoccupation with instructional process, rather than the consequences of instruction. *—James Popham, UCLA*

Overly aggressive secularization of schools and lack of defining a strong civic morality. *—Kevin Ryan, Boston University*

We have neglected to keep pace with the changing requirements of our society and the requirements of our burgeoning immigrant population. Colleges of Education and school districts seem to have built-in obsolescence. We lack a plan to readily change our programs and to assess current needs. Technologically we fall far behind industry. *—Jane Stallings, Texas A&M University*

Trying to reform schools from the top down, rather than working with teachers and parents from the bottom up.

—Ralph Tyler, Center for Advanced Study in Behavioral Sciences

Short school year, lack of national goals, poor instruction, lack of cooperation of home and school, and little incentive to improve. *—Herbert Walberg, University of Illinois at Chicago*

These problems are linked with many other inequities in our society in access to decent housing, health care, jobs, etc. One thing that has definitely contributed to the present crisis of inequality in our schools is the almost total neglect of preparing teachers to teach urban and rural poor children by our teacher education institutions.

—Kenneth Zeichner, University of Wisconsin

If you have an interesting question or an educational leader that you would like to bring to our attention, please contact: Gregory J. Marchant, Educational Psychology, Teachers College, Ball State University, Muncie, IN 47306.

Notice to MWERA Members Attending AERA in April

Dr. Carl Huberty

The AERA is meeting in Chicago this year from April 3–7, 1991. The Mid-Western Educational Research Association is sponsoring a discussion lead by Dr. Carl Huberty from the University of Georgia. The discussion will focus on **The Major Issues in Educational Research in the 1990s,** Wednesday, April 3, in the Lincoln Room of the Bismarck Hotel starting at 6 p.m. until 7:30 p.m., followed by a Cash Bar in the Maximilian Room from 7:30 to 9 p.m.

CALL FOR AWARDS

The Awards Committee of MWERA invites nominations of recent doctoral dissertations for the Mid-Western Educational Research Association and Wisconsin Educational Research Association Outstanding Dissertation Awards. Eligibility is determined by a successful defense of the dissertation during the calendar year, 1990. Awards will be made to those dissertations that reflect exceptional qualities of conception, method, presentation and importance.

The winner will receive: (1) One-year membership to MWERA; (2) a free registration to the annual meeting; (3) a publication of their work in the Mid-Western Educational Researcher.

Three copies of a letter of support from a doctoral committee member should accompany the nomination as well as three copies of a summary of the dissertation, not exceeding 15 pages in length. A blind review process will be used to screen the dissertation summaries.

Nomination deadline: May 15, 1991. Send nominations and materials to: Dr. Dennis W. Leitner, Department of Educational Psychology, Wham Building, Southern Illinois University, Carbondale, IL 62901.

The Association Council and all of the membership of the Mid-Western Educational Research Association wish to express their condolences to President-Elect Barbara Plake for the loss of her husband Donald.

Contributions in memory of Donald Plake can be made to: Lincoln Children's Museum, 1200 North Street, The Atrium, Lincoln, Nebraska 68508.

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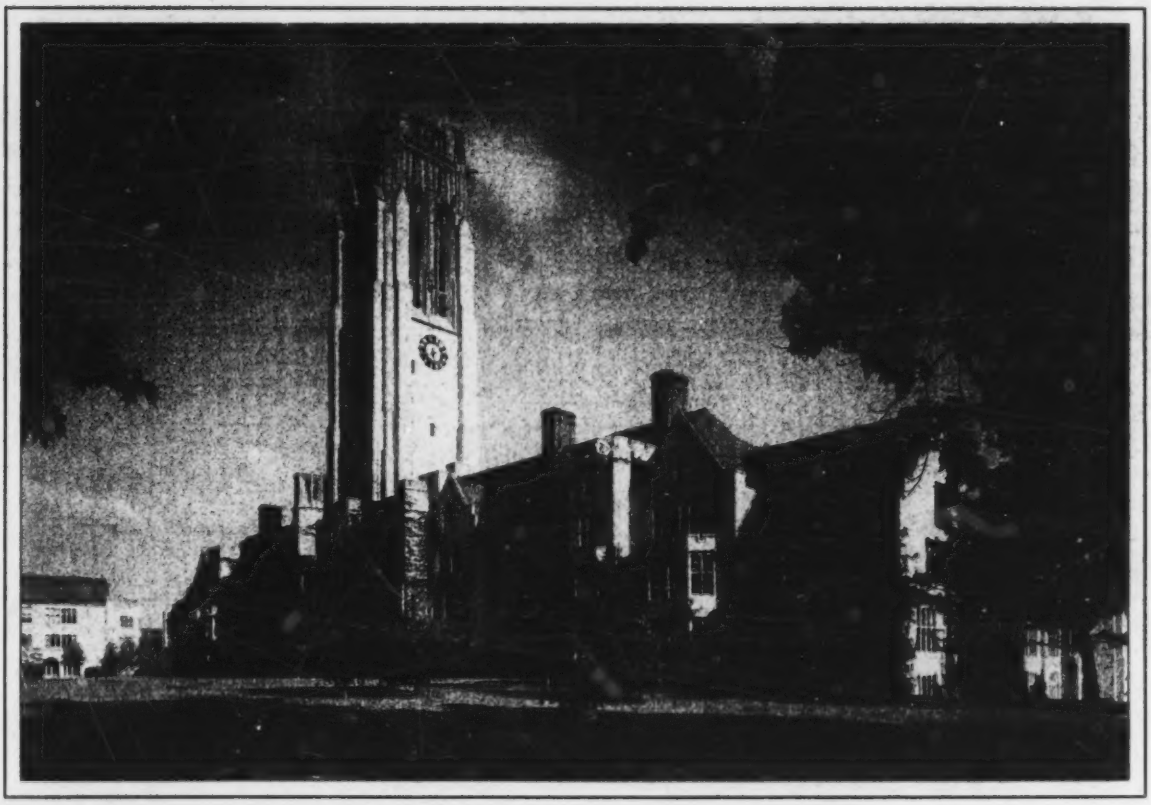

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We hope you have enjoyed the first three issues of the *Mid-Western Educational Researcher*. This current issue is an example of our efforts to meet the diverse needs of our membership. In addition to articles that represent different topics and methodologies, two new sections have been added to this issue. "Both Sides Now" presents two opposing views on parent choice. "MWERA Communication and Update" reports the most recent election results and describes MWERA's activities at this year's AERA meeting. Inside the back cover is a form requesting the research activities of our membership. This information will be printed in the Winter 1992 issue in hopes of facilitating communication and collaboration among the membership.

We wish to express our gratitude to all of the members who have submitted manuscripts. We encourage you to think of the *Mid-Western Educational Researcher* whenever you have a manuscript for publication. We also hope that you will send us feedback concerning articles and features that you have read. If you have any news of interest to the membership, please send it our way. See you in October.

ON THE COVER

The University of Toledo. Originating in 1872 with a gift of 160 acres of land donated by prominent Toledo citizen, Jesup W. Scott, the University of Toledo is in its 118th year of continuous service to higher education. The university is a member of the National Association of State Universities and Land Grant Colleges, and it is the fastest growing institution of higher education in the state of Ohio. It consists of seven colleges that award undergraduate degrees, as well as a graduate school and a college of law that offer advanced degrees. The College of Education and Allied Professions, with a current enrollment of 4,464 undergraduate and graduate students, confers baccalaureate, master's, specialists, and doctoral degrees. The college is fully accredited by NCATE and the North Central Association of Colleges and Secondary Schools as well as many discipline-centered accreditation boards and bodies. It has 112 full-time faculty members in seven academic departments. The college mission stresses an urban/suburban multicultural focus with an emphasis of teaching that is well grounded in research.

Information for Contributors to the Mid-Western Educational Researcher

The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 4, Number 3 Summer 1991

FEATURE

Nonexamples: Why Teachers Don't Use Them and Why Teacher Educators Should
By Thomas J. Lasley, Sandra J. Williams, and Patricia M. Hart, University of Dayton
2

ARTICLES

Note: ***Some Thoughts on the Relationship between Catastrophe Theory and Chaos***
By William C. Croom, Ph.D., Khosh & Associates
6

The Value of a Well-Intentioned Mistake: Notes from a Qualitative Research Methods Course
By Audrey Klemsasser, University of Wyoming
7

Contrasting Three Measurement Techniques for Scale Development
By William E. Loadman, The Ohio State University, Susan M. Brookhart, Duquesne University, and Suwimon Wongwanich, Chulalongkorn University
10

Both Sides Now: Parent Choice
Some Thoughts on Educational Choice by William R. Hazard, Northwestern University
Your School: Love It or Leave It by Gregory J. Marchant, Ball State University
15

Research Alive
19

New Conceptualizations of Intelligence: An Interview with Robert Sternberg
By Carolyn R. Benz, University of Dayton
23

Correlates of Examinee Item Choice Behavior in Self-Adapted Testing
By Phillip L. Johnson, Linda L. Roos, Steven L. Wise, and Barbara S. Plake, University of Nebraska-Lincoln
25

Evaluation of Applicants for Employment in Higher Education: A Faculty Search Committee's Results and Recommendations
By Mary R. Sudzina and Roger N. Carlsen, The University of Dayton
29

School Psychological Services Within Urban Structuring
By E. M. Bard, Ph.D., Chief Psychologist, and James T. Hardy, Ph.D., Assistant Superintendent, Akron Public Schools
35

Voices in Education
38

MWERA Communication & Update
39

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Nonexamples: Why Teachers Don't Use Them and Why Teacher Educators Should

By Thomas J. Lasley, Sandra J. Williams, and Patricia M. Hart
University of Dayton

Abstract

Student teaching continues to be one of the most vital aspects of the preservice experience for prospective teachers. In this study the authors investigate how preservice teachers use a specific skill they learned during a social studies methods course. The skill, concept teaching, was taught to students using conventional teacher education practices, lecture and a limited amount of teacher modeling. Findings suggest a need for more intense modeling and practice regimens that ensure student acquisition of requisite teaching skills.

The teaching of concepts is at the heart of an effective social studies curriculum. Concepts are building blocks for the generalizations and theories that enable students to organize and understand the social, historical, and political events around them. "Without concepts," notes McKinney (1985), "the world would become greatly confused and communication would become extremely difficult . . . concepts help us organize reality and communicate effectively with one another" (p. 66).

Teachers present hundreds of concepts to students during a school year. But the degree to which students acquire understanding of those concepts is dependent on factors such as: the amount of time teachers devote to teaching the respective concepts; the clarity with which ideas are defined and explained; the relationship of new concepts to old ones; and, finally, the capacity of teachers to use examples and nonexamples as part of the exposition phase of concept development lessons. The use of examples and nonexamples will be the focus of this paper.

Research by Merrill and Tennyson (1977, 1978), Tennyson (1973), and McKinney (1985) suggests that student acquisition of concepts can be enhanced if teachers, using matched examples and nonexamples, explain why each cited instance is (example) or is not (nonexample) an exemplar of the concept being taught. As an illustration, when teaching the concept of natural resources the teacher may cite the example "forest" and then provide a matched nonexample, "paper." Through the use of both examples and nonexamples, prospective teachers develop in students a more thorough understanding of the critical attributes of a concept and are better able to help students discern what constitutes a form of the concept. Nonexamples, in particular, extend the students' understanding of concepts and force them to look at each "case" in terms of whether it does or does not possess the necessary critical attributes.

Because prospective teachers have so much more experience with the use of examples, through their schooling and training, the researchers decided for purposes of this study to focus on how (and whether) preservice teachers use nonexamples in their teaching of concepts during student teaching. Participants in the study demonstrated during a social studies methods class an understanding of the Tennyson model and other concept teaching approaches that emphasize the use of nonexamples. The authors were interested in the transfer of this knowledge about the use of nonexamples into the lessons taught during the student teaching experience.

The Study

The study consisted of observing three student teachers during a series of 18 social studies (and science) lessons and then interviewing them regarding the structure and content of those lessons. The student teachers were selected primarily on the basis of their differential performance in a social studies methods course, a course in which concept teaching is discussed in detail. That is, the students were classified as having potential for strong performance (ST-A), average performance (ST-B), and weak performance (ST-C). Each student was then observed teaching several different lessons and subsequently interviewed regarding the structure and content of the lessons. The observer was not aware of the perceived potential for success of each student teacher.

The intent of the researchers in this pilot study was, simply, to collect data that might prove useful in revising a social studies methods course with regard to concept teaching. The researchers observed and recorded the manner in which the "purposeful" sample of student teachers introduced and explained concepts (such as bartering, transportation, and culture) in teaching social studies lessons.

The findings are presented below and fall into three categories. The categories are intentionally broad and are inclusive of the explanations given by the student teachers and/or collected as part of the observations of the researchers. The categories were inductively formed following an analysis of the available qualitative data.

Finding 1: The preservice teachers relied almost exclusively on examples to explain concepts.

The preservice teachers viewed it as counterproductive to present nonexamples of a concept to students. Indeed, 18 different concept lessons were observed for the student teachers and not a single nonexample was used by the participants as a means of explaining to students an idea or clarifying a concept. The explanations for this behavior varied. One student teachers responded that she disliked the use of nonexamples because of the implied negativism.

> I think I might have tried to see how it would have gone over. It was one method that I didn't like because it had a negative aspect toward it. (ST-C)

Another student claimed that the use of nonexamples was too discrepant from what she (ST-A) had experienced during her own schooling experiences. Her teachers had always relied on examples to explain concepts and, hence, she could see no reason to justify the use of nonexamples as part of a lesson.

> The only time that I had heard [using nonexamples] or had experience with that was in [the university social studies] class. I don't know if it was just that having been exposed to just giving examples that I never really touched on giving negative examples.

The third student teacher asserted that the use of nonexamples might confuse students. She (ST-B) was not certain that elementary age students had the cognitive skills to cope with the (apparent) complexities of using nonexamples to explain a concept.

Finding 2: The preservice teachers relied on instructional materials that emphasize the use of examples in explaining concepts.

Preservice teachers have limited exposure to the use of nonexamples. Textbooks used by university-level instructors devote a great deal of space to concept instruction, but give little space to how and why prospective teachers should use nonexamples in the context of a lesson. Michaelis, for example, in *Social Studies for Children* (8th edition) commits fewer than two pages of copy to the use of nonexamples as a technique for concept development.

Other prominent methods texts implicitly question the use of negative examples. Banks, in *Teaching Strategies for the Social Studies* (2nd edition), asserts: "Although it is true that some learning does occur with negative examples, learners are forced to spend an inordinate amount of time, inefficiently searching for the appropriate clues leading them to the discriminating characteristic" (p. 86). Banks does call for a "balancing" of examples and nonexamples based on the instructional needs of students, but he clearly emphasizes that "concepts are most efficiently learned when a number of positive examples are first introduced and the discriminating characteristic clearly established" (p. 86).

Other texts, such as *Social Studies and the Elementary School Child* (4th edition) by Maxim, cite a model using nonexamples, but no explanation of the value of this skill. Welton and Mallan (3rd edition) in their *Children and Their World* encourage college students to use "numerous concrete examples" (p. 93) to teach complex concepts, making no mention of the potential of nonexamples.

The bias of methods text, whether implicit or explicit, is manifest in favor of using examples and excluding the use of nonexamples to define a concept. The prospective teachers in this study experienced reliance in the resource materials on examples and, as a consequence, expressed reservations about trying other techniques. ST-A commented:

> The textbooks that I had during [college] . . . never really explained how to use the [nonexample] method.

The teachers' manuals in schools also are geared toward the use of examples. The textbook series used by the student teachers, *The United States: People and Leaders* (Modern Curriculum Press, 1984), in their classroom assignments relied almost exclusively on concept development activities that would best be described as "labeling" activities (e.g., demonstrating, using analogies, or stating operations) or "problem solving and inquiring" strategies (i.e., state a problem, pose questions, process relevant information, state a conclusion).

Two student teachers noted the absence of nonexamples in the teacher's manual":

> They [the manuals] told you what kinds of examples to give. I think that plays a part even though I tend not to rely on the manuals a whole lot but I did notice that the manuals don't use that [nonexample technique]. (ST-A)
>
> The fact that you would follow the teacher's manual along and they would give you ideas on how to put concepts across and they just omit mentioning [nonexamples] and you would omit it when you were planning. (ST-B)

Finding 3: The preservice teachers relied primarily on previous experience to determine how to teach concepts.

The extent of professional preparation experiences on prospective teachers is still unknown. Clearly, in an aggregate sense teacher education and staff development efforts can and do alter the dispositions of teachers (see Evertson, Hawley, & Zlotnik, 1985; Porter, 1986), but just as evident is the fact that many teachers continue to rely upon previous personal experiences in classrooms in determining how to teach others (see Clark, Smith, Newby, & Cook, 1985); they continue, in essence, to teach as they were taught.

The student teachers involved in this study acknowledged that the use of nonexamples was discussed as part of methods

(continued on page 4)

course instruction. The exposure was viewed as sufficiently anomalous, however, that the participants saw no reason to change the way they "naturally" thought a lesson should be structured.

> I know that when I took the [social studies] course, we talked a lot about [nonexamples]. I guess that all of my experiences have always been just the opposite . . . The only time that I had heard . . . [about nonexamples] was in [social studies] class. I don't know if it was just that having been exposed to just giving examples that I never really touched on giving negative examples. (ST-A)

Prospective teachers are socialized through 12 years of direct experience with schools and teachers and through four years of additional general and professional study on a wide variety of "acceptable" instructional approaches. They develop a sense of how ideas should be taught, presented, and organized. Countering that massive exposure with "new" techniques that they have neither experienced nor find easy to assimilate is a substantial problem for all those interested in changing (prospective) teacher behavior. As one student teacher remarked:

> . . . [A]fter four years of education in [a] teacher education program, you spend . . . two weeks on negative teaching. I don't think that is enough time. When all of the other ways . . . [have] been reinforced throughout the four years and you are spending two weeks on this one method . . . even if you did know how to do it you might have forgotten about it because you didn't spend enough time on it. (ST-C)

A number of studies (Hodges, 1982; Grant, 1981: Katz & Raths, 1982) indicate, as this one does, that any methods taught in a college education course have little impact on the actual methods used by students even during their field experience. Students in the high-anxiety atmosphere of student teaching, particularly, tend to fall back on what is most familiar. In most situations, this would be the methods modeled in the lifetime educational experience of the student, or the guidelines of the lesson plan being used. This tendency, sometimes called the "utilitarian perspective," is a tendency to do whatever gets the lesson completed in an effective manner (Zeichner & Teitelbaum, 1982).

Studies have shown that a number of factors lead to the reversal of what is learned in a student's academic training, once a student enters teaching. The "norms" of the school, the techniques of colleagues, even the pupils themselves may all play a role in reversing the techniques taught in an academic program (Zeichner & Tabachnick, 1981). If teacher education programs endeavor to improve the general practice, a more comprehensive system of instruction, modeling and support must be developed.

Discussion

The use of nonexamples as an instructional approach was taught to the student teachers in this study in what might best be characterized as a "typical fashion." That is, students read material on nonexamples (see, for example, McKinney, 1985); they prepared lessons on how to use nonexamples; and the instructor in the course presented a sample lesson in which nonexamples were used to teach the concept "natural resources." In total, approximately four to five hours of class time were spent on the topic of concept teaching using examples and nonexamples. Students were subsequently tested to determine their understanding.

What resulted was that prospective teachers "knew that" it was desirable to use nonexamples to help students understand a concept, but they still did not "know how" to accomplish it or did not recall its potential for use when it could have been employed. As one student noted:

> I didn't think about using nonexamples. If someone had reminded me, I would have used them. (ST-A)

The gap between awareness and action has long been evidenced in teacher education (see Gage, 1978). And studies such as this one suggest, again, how difficult it is to bridge that gap. The following recommendations are intended as potential next steps for extending the "effects" of preservice professional development experiences.

1. Teacher educators should focus on fewer instructional skills, but develop a broader range of experiences to foster skill development.

Teacher education in social studies and in other disciplines tends to be eclectic. Instructors have a tremendous amount of content to cover and a limited amount of time. Instead of trying to "squeeze" everything in, social studies educators should "push material out" until what is left realistically can be taught to and learned by those about to enter teaching. Professional development is a lifelong experience, not everything can or should be taught in an undergraduate education curriculum. If Joyce and Showers (1982) are correct that changing teacher behavior with regard to acquisition of a teaching skill requires hours of coaching and practice sessions, then it is little wonder that "broad" courses covering a wide range of topics have so little impact on preservice teacher dispositions to use specific teaching skills.

2. Teacher educators should provide a high ratio of concrete to abstract experiences.

Most college instruction is, implicitly at least, based on the premise that undergraduates are formal operations learners who can deal with and understand abstractions. Recent studies

(Reyes, 1987), however, suggest that a majority of undergraduate students is still functioning at Piaget's concrete operational stage vis-a-vis learning tasks that require some measure of objective reasoning. Many, if not most, teacher education students till function at a cognitive level approximating the concrete operations stage. As a result, prospective teachers must not only read about the use of nonexamples, they must also see (on videotape) multiple examples of their use, test their skills in peer teaching situations, and then be "coached" on their use in actual classroom situations. As Joyce and Showers (1982) assert:

> At least 15 to 20 demonstrations of the model should be observed, using learners with various characteristics and several content areas. Demonstrations are also needed when teachers try the model for the first time, when they introduce students to the model, and when they are learning how to teach it to them. The attainment of competence requires numerous practice sessions. Each teacher needs to try to the model with peers and small groups of students from 10 to 15 times before a high level of skill becomes evident. (p. 6)

3. Teacher educators must be able and willing to model skills in classrooms.

Prospective teachers must see skills being used in order to appreciate their value. They value the use of examples because that is what they know, what they have experienced. To gain an appreciation of understanding for "new" methods, prospective teachers must experience firsthand and as a natural part of the teacher education process the use of techniques such as the expositional teaching of concepts—concept teaching that includes both examples and nonexamples. Modeling is an important dynamic to helping students understand and use new teaching strategies in classrooms, and teacher educators serve as important pedagogical models. Reece, Berns, and Heath (1985) found that preservice teachers *do* notice if instructors model research-based teaching behaviors and "more than half of the students said this modeling approach influenced how they taught during their student teaching" (p. 6).

4. Reinforce the technique of using nonexamples by choosing cooperating teachers who routinely employ this technique or enlist the support of the cooperating teacher in encouraging the student to use nonexamples in their teaching.

If a student teacher is to have the confidence to employ a research-based teaching method, it is essential that the practice of that technique, be modeled and/or supported in field experiences. Without this support, the student is almost certainly going to fall back on more familiar approaches.

Conclusion

The findings of this study should not be surprising to anyone familiar with the complexity of teaching and teacher education. They suggest how intensive the student teaching experience must be if skills learned during methods courses are to be evidenced in actual classroom settings. Student teachers, struggling to survive the exigencies of lesson planning and classroom management, are overwhelmed by the task of teaching. To survive they rely on instructional techniques that are familiar and, as a consequence, teach as they themselves were taught, which in terms of concept teaching means a reliance on examples and textbook definitions.

The use of nonexamples is a relatively complex skill that requires coaching and an in-depth knowledge of subject matter. Appreciating the value of nonexamples necessitates that prospective teachers receive substantial guided practice and training beyond what is currently provided in most teacher education programs. Fostering the use of nonexamples as a part of a teacher's repertoire most likely would mean the adoption of a "continuous view" of teacher education, beginning in the preservice curriculum and extending through carefully structured inservice education. Further, their use will require textbook publishers of collegiate and elementary and secondary social studies texts to rethink how concepts are presented, explained, and highlighted. The unfortunate but very real reliance of teachers on textbooks will necessitate that instructional resources be modified to demonstrate how nonexamples can be used to explain to students concepts central to the social studies curriculum.

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(continued on page 6)

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Note: *Some Thoughts on the Relationship between Catastrophe Theory and Chaos*

By William C. Croom, Ph.D., Khosh & Associates, Cleveland, Ohio.

Catastrophe theory addresses nonlinearities in systems—places at which smooth (monotonic) change breaks down and wildly divergent behaviors emerge that can scarcely be predicted from the system's prior state. D'Costa's (1991) elegant and eloquent example of using a cusp catastrophe to illustrate fight-flight reaction in a dog underscores the usefulness of using geometric models to aid understanding of (presumably) underlying behavioral dynamics. It should be noted, however, that the body of research grouped under the loose rubric of "chaos theory" (an unfortunate term) is applicable here as well. Chaos theory shares with catastrophe theory its geometrical outlook and claim to universal applicability. Catastrophes are concerned with singularities; chaos is concerned abrupt changes at boundaries. Catastrophes occur within a larger behavioral framework that is in some sense, limited. For example, the dog in the example will fight or flee—we are not just sure which or when. He will almost certainly not sing opera. Chaos also speaks to unpredictability within a larger framework of limits. Long-term weather prediction has been demonstrated to be an impossibility, yet the probability that it will reach 130 degrees at the North Pole in winter is vanishingly small. Both chaos and catastrophe theories are marked by self-similarity across scale. With the cusp catastrophe example, a fall "off the surface" near the fold results in only a little aggression or flight; a fall farther out results in a more exaggerated response. *Without knowledge of the scale* of the behavior change (here represented by vigor of attack or flight), all an observer can do with certainty is note that a catastrophe has occurred. The singularity in each case is the same, a gradual behavior change followed by an abrupt and "unpredictable" discontinuity. Chaos explains, for example, why coastlines, bays, estuaries, river mouths and banks of creeks all have the same underlying shape. *Without knowledge of the scale* (here represented by distance from what is being observed), an observer cannot know with certainty at what boundary he or she is looking. The underlying sense of "coastlineness" is the same.

(continued on page 40)

The Value of a Well-Intentioned Mistake: Notes from a Qualitative Research Methods Course

By Audrey Kleinsasser, University of Wyoming

Abstract

Two instructional strategies are outlined in the article. Each strategy creates opportunities for graduate students to learn from mistakes and practice the self-criticism or reflexivity which is necessary for a qualitative researcher. The strategies are conceptualizing writing as a process and conceptualizing course projects as pre-studies or pilots. The article closes with recommendations about evaluating students' writing.

Learning from a mistake, especially a well-intentioned mistake, is one of the best ways to conceptualize the process of real research work. Opportunities to reflect about one's mistakes create a context in a research course for rethinking the problem and the possible solutions or alternatives to the problem. The self-reflection which is crucial for all researchers is particularly important for qualitative researchers in educational fields. Qualitative researchers purposely enter the research site as participant observers or insiders. For this reason, the qualitative researcher must apply merciless self-criticism (merciless self-criticism is a metaphor for the critical analysis of one's self used by Cary, 1991).

In this article, two instructional strategies are outlined. Each strategy creates opportunities for graduate students to learn from mistakes and practice self-criticism or reflexivity which is necessary for qualitative research. The strategies are conceptualizing writing as a process and conceptualizing course projects as pre-studies or pilots. While both of the strategies are designed for use in a qualitative research course, they are also successful in introduction to research courses. The article closes with recommendations about evaluating students' writing.

Writing as a process. Conceptualizing writing as an opportunity to learn from mistakes is substantiated by a research base, which is guiding writing instruction in elementary, secondary, and post-secondary levels. Writing process scholars differentiate writing as a product from writing as an authentic communication with a specific audience. (See Emig, 1983; Graves, 1983; Murray, 1982, for representative examples of writing process research findings and applications.) In research courses, an emphasis on writing as a process is legitimate for two reasons. First, writing helps the student think through the research problem. Second, writing is one medium commonly used to communicate the research findings to an audience.

The first set of required readings for the qualitative research methods course described here includes several chapters from Howard Becker's *Writing for Social Scientists* (1986). Becker reminds writers of three important givens: (a) writing is hard work; (b) writing is almost always improved by having someone else read it; and (c) there is no such thing as a perfect first draft.

When research methods instructors relieve the pressure to write a perfect draft of a document, students approach the writing process in a different manner. They come to value the opportunity to write more than one draft rather than see the revision process as tedious busy work. In their drafts, students jot notes in the margins, usually questions for the reader. In the course, students come to think of all of the writing assignments as working drafts. In the section that follows, reflexive journals are examined as one way to implement a writing to learn model in a research methods course.

Reflexive journals. Lincoln and Guba (1984) recommend that qualitative researchers keep a reflexive journal in addition to field notes. The journal is a running conversation the researcher has with her or himself. The journal differs from a field notebook in that it is the source of the researcher's hunches, worries, and concerns. The reflexive journal is a qualitative research tool to practice and monitor reflexivity. Reflexivity is the researcher's ongoing engagement with the research question and the research methodology.

Students keep a reflexive journal as part of their course requirement. The requirement illustrates the importance of journaling as a data source for a qualitative researcher. It also forces the student to practice the ongoing reflexivity with the research question that is part of the interpretative process of qualitative research. While some of the journaling occurs outside of class time, students journal during class as well. Using class time reinforces the centrality of reflexivity in the qualitative research process.

Sometimes, the journal topics are ones the instructor directs students to think about and respond to. More often, the topics are student-selected. This semester, some of the students found it particularly helpful to form groups of two or three to read and react to portions of each other's journals. Reading each other's journal entries stimulated discussions between and among students and stimulated even more writing.

When students read each other's journal entries, the transition to reading drafts of other course-related writing is

(continued on page 8)

natural and logical. For example, students ask each other to read the draft for meaning, the flow of the argument, and to critique the introduction. Whenever the instructor reads their drafts, she models the same process by asking students to focus her reading on a particular question or two.

To summarize, reflexive journals are writing to learn opportunities which model the reality of the qualitative research process. Being a researcher means being a communicator. One of the chief outcomes of a qualitative research methods course is to learn the process of communicating one's research findings accurately and convincingly. Writing reflexive journals gives students the opportunity to practice the merciless self-criticism that qualitative researchers call reflexivity.

Just as the revision process is an opportunity to learn from mistakes, so too, is the data collection process. Some students are frozen before they begin. They are afraid of making a mistake, even if they have a workable research design. For this reason, it is an invaluable teaching technique to conceptualize any kind of major course project as a pre-study. Conceptualizing the pre-study as part of the research process is the topic of the next section.

Conducting pre-studies. In the qualitative research methods course described here, one of the major course outcomes is conducting a pre-study. While there isn't any student-teacher negotiation about the fact that a pre-study has to be completed, the students and the instructor negotiate and re-negotiate all aspects of the pre-study from topic selection to components of the final draft. Even after a student has made a commitment to complete a pre-study, the instructor and the student continue negotiating. The following example from a qualitative research course illustrates the way a graduate student named Ken and the instructor negotiated his pre-study.

Ken had decided to conduct interviews and participant observations on fly fishing, a topic about which he had little formal knowledge. As part of his research method, he observed and talked with people at the local fly fishing store. He experienced fly fishing with several colleagues who were enthusiastic and expert fly fishermen as well as articulate interview respondents. Well into his pre-study, Ken got worried. The instructor urged him to express his concerns to the class. He told the class, "This study doesn't seem to be very important. I mean, what's significant about the culture of fly fishing—if you can even call it a culture?"

The instructor responded, "If you feel that strongly, you might consider jettisoning the study." Pausing a moment to allow the ramifications of the suggestion to sink in, she then said, "Have you considered writing up why you *don't* think it is worthy as a qualitative pre-study. You could focus on the issues of the particular and the general which are central to investigations using ethnographic methods."

The instructor's response to Ken prompted a spirited discussion among the class members. "Dump a study? Stop in the middle? Do researchers really do that?" Yes, researchers do that, not intentionally or with great enthusiasm, but projects go bad or simply fail to develop according to the research plan. Sometimes what seems to be the middle of a study is really the end. Sometimes the data sources are not rich enough to develop a study. For all of these reasons, it is important for researchers to develop pilots or pre-studies.

Ken's dilemma and his willingness to share it brought home the point that conducting a pilot or pre-study makes good research sense! Stepping back to examine how the study is developing or not developing is the kind of reflexivity students can experience by conducting a pre-study.

In qualitative research courses, it is valuable to ask students to conceptualize all major course projects as pilot studies or pre-studies. Catching on to the idea, one of the students called his project a green pilot. The terminology, whether pre-study, pilot, or green pilot emphasizes that the primary purpose of the assignment is for the student to learn about the process of conducting research. It also focuses on the self-criticism a qualitative researcher must submit to.

Qualitative research methodologists often use the expression "researcher as instrument" to describe what the researcher does. Like all instruments, the human instrument has strengths and limitations. For the qualitative researcher, self-criticism is a research skill. Part of the text of a pre-study should be some evidence that the researcher critically examined him or herself for motives, observation and interview decisions, and the researcher's interpretation of an event. Reflexivity is a measure of researcher sophistication. It is also a clue to the reader about the researcher's role in the study.

In a qualitative research methods course it is important for a student to have opportunities to incorporate reflexivity into his or her writing. Evidence of reflexivity should be found in the narrative write up. Information about the way an investigation was conducted—how the researcher as instrument was used—contributes to the investigation's credibility and trustworthiness.

In summary, using the specific language of pre-study, pilot, or green pilot alleviates the pressure to produce a perfect draft. Not having to produce the perfect write-up requires a view of writing that puts as much value on pre-writing and revisions as it does the final draft. It also emphasizes reflexivity, which for a novice researcher may be the most important research skill to hone.

Conceptualizing writing as a process and producing pre-study drafts that de-emphasize writing the perfect, once-and-for-all version requires an evaluation or grading model that is philosophically consistent. The grading and evaluation of course assignments is the final topic of this article.

Evaluating course assignments. The opportunity to make mistakes in a research methods course will be valuable to students if the instructor gives students credit for making

and learning from their mistakes. One strategy which has been used with considerable success is a course contract. For example, expectations for the course may be delineated in the course outline. For instance, students may be required to submit interview and observation protocols and write-ups, a plan for reading beyond the required readings, a plan for journaling, and a field-based pre-study. From that point, the negotiation process begins. Draft writing can be built into the contract. Commitment to the revision process demonstrates that all drafts are valued, not just the final draft.

With draft writing an important part of all written assignments, there is more to read. As part of the contract negotiations, students may be asked to think about who will read their work. Several students met the journal writing component of the course by negotiating to read segments from each other's journals. To monitor the process, the instructor may ask students to submit several selected journal entries during the course of the semester, but the writing commitment is to each other, not to the instructor.

One of the benefits of this approach is that students have more than one reader of their texts. Most students ask for comments from several readers of their journaling, interview and observation protocols, and drafts of their pre-studies. The benefit to the student is obvious: more people read and react to their drafts. By the end of the semester, students are relying on one another in an authentic way—just like researchers ask colleagues to critique their writing. The instructor's reading load is not increased. In fact, the instructor's reading of student work is more focused since students submit a draft with a particular question, e.g., "Give me some feedback about the depth of questioning in my interview." The questions students ask focus on substantive or methodological issues that are important to them. These are the methodological issues they are ready to learn about.

A final note about evaluating student work is warranted. Having taught qualitative research methods courses under a Satisfactory/Unsatisfactory grading model and an A–F model, the S/U model seems to enable students to make and learn from mistakes more confidently than the A–F model.

Instructors of qualitative research methods courses need to develop a course evaluation model that complements writing process objectives, researcher reflexivity, and intellectual risk-taking. Thinking about the grading model is a key to course development and should occur early in course development.

Conclusion

The opportunity to make and learn from well-intentioned mistakes can be built into qualitative research methods courses. In course assignments, instructors can implement teaching strategies which value the mistakes students learn from. Students can experience the work of a qualitative researcher in an authentic manner by conceptualizing written work as a learning process and thinking about course projects as pre-studies or pilots. If the teaching strategies are not anchored in an evaluation model, which accounts for and values the process of reflexivity and revision, students will not see research activity as a process of planning a study, implementing a methodology, analyzing data, and drafting purposeful revisions.

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Endnotes

For the record, Ken did complete the pre-study which focused on a close examination of flying fishing in a Rocky Mountain West community while trying to get at the culture of fly fishing. Subsequently, he sent a letter of inquiry to *Field and Stream* about publishing the piece there. Ken sent the magazine a copy of the manuscript.

Contrasting Three Measurement Techniques for Scale Development

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Abstract

Three different methods for grouping items in an opinion survey were compared for their utility in subscale construction: rational organization according to content, factor analysis, and multidimensional scaling. Data were Likert-scale responses to 54 items regarding Holmes Group educational reform concepts by 175 teachers, 215 public school administrators, and 100 university education faculty. Criteria used to evaluate subscales included reliability, additivity, and interpretability. Results indicated that factor analysis was a more useful tool for subscale construction than multidimensional scaling or rational organization.

The purpose of this study was to compare three methods of item organization for their utility in developing reliable, meaningful subscales to measure attitudes toward educational reform issues. Attitude scales are often used in educational research. It is therefore important to find ways to construct them well, for their quality affects directly the insights that can be gained, reported, and discussed from such scales. This investigation of a multidimensional data set with rational organization, factor analysis, and multidimensional scaling considered both how these methods grouped the items differently and, once grouped, how well each of these sets of items lent themselves to becoming meaningful, usable subscales. The goal was a straightforward way of constructing subscales that would be reliable and valid as well as clearly interpretable, without complicated weighting schemes, for improving the quality of the kind of data often collected in attitude surveys.

One of the assumptions underlying the use of a linear composite scale is unidimensionality (McIver & Carmines, 1981). This is at root a validity question: is the attitude, defined by the items on a scale, a single construct? The investigators looked at three ways of establishing unidimensionality. Rational organization had been used for item generation and instrument development. Factor analysis and multidimensional scaling were chosen as the two other techniques for comparison because these are two standard, useful methods for discovering unmeasured variables or concepts underlying multivariate data (Rummel, 1970; Young, 1987). Factor analysis and multidimensional scaling solutions have been compared. Scaling solutions tend to be simpler than factor anlaysis solutions and be bipolar, while factor analysis solutions tend to have mostly positive loadings (Davison, 1981). MacCallum (1974) noted that the two methods vary according to purpose and type of data analyzed. Scaling often is done for the purpose of plotting variables, in this case items, along dimensions, and thus tends to emphasize the position of the measured variables. Factor analysis emphasizes the discovery of factors or underlying constructs and thus tends to emphasize the unmeasured variables. Napior (1972) recommended using both procedures on Likert-type items to uncover structure in the data and then choosing the more useful of the structures identified for building subscales. He meant by usefulness the factors or dimensions which seemed most interpretable for the research purpose.

Once unidimensional item groupings are chosen, the method of arriving at a scale score is often simply summing unweighted responses to component items. Nunnally (1978) argued that more complicated weighting results in scores that correlate highly with simple summation scores. Reliability or consistency of scale scores must also be considered. There are two aspects to consistency, consistency of items and of persons. Cronbach's alpha measures internal consistency of items (SPSS, 1986).

Scale scores should also consistently measure attitudes across persons. Similar scores on an attitude scale should indicate individuals with similar attitudes. But people do not always respond consistently to all the items in a set. Simply summing scores assumes each item has equal weight for each individual (Napior, 1972). Napior suggested using Guttman's least-squares scaling model to assign different weights to each category for each item. This solution handles the problem of interaction or differential treatment of items by respondents.

Another way to achieve consistency of scale use by persons is to transform data by raising it to an appropriate power to achieve additivity, as measured by Tukey's test for nonadditivity (SPSS, 1986). The null hypothesis for this test is that there is no person-by-item interaction or, equivalently, that there is homogeneity of covariance among pairs of items. This null hypothesis should be accepted: Tukey's test for non-additivity should *not* be significant in order to allow the conclusion that a scale is additive. The SPSSX output will provide an estimate of the power to which data should be raised to meet the assumption of additivity for consistency of responses across persons.

Neither of these statistical solutions, Guttman's differential weighting of categories for each item or Tukey's data transformation, go very far toward a simple, straightforward interpretation of what the scale scores might mean, and meaning is a prime

consideration in educational research. How does one interpret agreement for a reader when, using Guttman's technique, for one item "agree" has one weight but for another item, "agree" is weighted differently? Or how does one justify, as would have been necessary for the rational scales in this study, raising responses to one set of items to a power of 2.48 while raising another group of responses to a power of 1.64, when the items were intermixed on the instrument?

Another solution is to refine the subscales so they do not need transforming in order to be consistent across persons. Refining scales until they were naturally additive was the approach taken for this study. The meaning of the scales, as simple sums indicative of attitude toward individual educational reform issues, was a priority because the goal was to create meaningful, reliable subscales which were clear and understandable, and thus would be used in applied research about educational reform.

Method and Results

The data were part of a larger study (Loadman, Brookhart, & Wongwanich, 1987) for which questionnaires had been developed, checked for content validity, administered, checked for reliability (internal consistency) and internal validity; descriptive results were reported. The current study considered the data from three groups of professional educators: teachers, public school administrators, and university education faculty. These three groups had a common Part Two in their questionnaires, a set of 54 Likert-type items. The items were generated as stimuli for responses on a scale of 1, strongly disagree, to 5, strongly agree. Complete sets of responses from 175 teachers and 215 public school administrators in Franklin County, Ohio, and 100 university education faculty members at The Ohio State University were used in analysis. The variances of responses to each item were sufficiently large to indicate heterogeneity of opinion in the sample (Hsu, 1979). The presence of variability in the data meant that the data were more suitable for multivariate procedures such as factor analysis and multidimensional scaling than had there been homogeneity or agreement.

The distributions for each item were checked, since distributions that were very skewed could be expected to affect the factor analysis (Rummel, 1970). It is also the case that the distributions of scores affect the scaled scores. The modal reaction to a statement used in a summative scale should be approximately in the center of possible responses (Likert, 1974). The range of means among the 54 items was 2.16 to 4.57. Standard deviations ranged from .67 to 1.36. The distributions were judged symmetrical enough to proceed.

Three different sets of subscales were constructed, with the items organized rationally and by the results of factor analysis and multidimensional scaling. In each case, items were grouped into subscales, Cronbach's alpha was calculated, and Tukey's test for additivity was run. Criterion for an acceptable alpha was set at .70, and criterion for additivity was set at accepting the null hypothesis for Tukey's test at the .05 level. An additional criterion of interpretability was used. Consistent with the purpose of constructing straightforward, meaningful subscales, the investigators evaluated the content of an item for a match with the other items in its group. Investigators, judgments were based on their recent literature review (Loadman, Brookhart, and Wongwanich, 1987) of Holmes Group issues.

Rational Organization Four groups of items had been written, based on the five Holmes Group goals (Holmes Group, 1986); the fourth and fifth goals had been treated as one group because both concerned public schools, and items written for these two goals sounded very similar. Cronbach's alpha and results of Tukey's test for additivity for four subscales are presented in Table 1.

Table 1

Characteristics of Subscales Based on Rational Organization of 54 Items

Subscale	Content	No. of Items	Cronbach's Alpha	Additivity*
I.	To make the education of teachers intellectually more solid	16	.85	no
II.	To recognize differences in teachers, knowledge, skill, and commitment	14	.69	yes
III.	To create professionally relevant, intellectually defensible standards of entry into teaching	11	.59	yes
IV.	To connect schools of education to schools, and to make schools better places	13	.75	no

*Based on Tukey's test of additivity.

Reliability but not additivity was acceptable for two of the subscales. The other two scales were additive, but reliability was not high enough. The next step in scale revision was to drop items, one by one, with the aim of acceptable reliability and additivity measures. Rational organization by itself provided no way to prioritize which items to drop.

One other way to identify items which might be dropped from the scales to refine them was attempted. Principal axis factor analysis was done for each set of items separately. Reduced correlation matrices, with squared multiple correlations on the diagonals, were analyzed because contributions to common variance were of interest. If a single factor could be extracted for each rational grouping of items, the factor loadings could be used to prioritize items for inclusion on revised subscales. The eigenvalues which resulted from these factor analyses are presented in Table 2. Two of the four rational groups of items were

(continued on page 12)

Table 2

Eigenvalues from Factor Analyses of Rational Groups of Items Principal Axis Solution, Using Squared Multiple Correlations for Prior Communality Estimates

No. of Factors	Item Group I	Item Group II	Item Group III	Item Group IV
1	4.96*	2.63*	1.38	2.73
2	.76	.83	1.31*	1.11*
3	.43	.31	.23	.39
4	.34	.22	.13	.34

*Number of factors chosen

best described with two factors. Rational grouping had not succeeded in identifying unidimensional subscales. It would have been statistically possible to proceed with building six subscales, but the items on two of these subscales were not clearly different: both referred to academic aspects of teacher education. For content reasons, then, the rational subscales did not easily lend themselves to revision into the meaningful, reliable, valid subscales which were the goal of this study.

Multidimensional Scaling Nonmetric multidimensional scaling was done on a matrix of dissimilarities computed as one minus the correlations among the 54 items. Nonmetric scaling was chosen because of less stringent assumptions about the properties of the Likert scale and because nonmetric solutions are sometimes clearer, as the distance estimates are only constrained by rank order (Carroll & Wish, 1982). The data were transformed from similarities measured by correlations into dissimilarities because the scaling algorithm was written for dissimilarity data and functions best with this type of data (SAS, 1983).

The stress values for two- through six-dimensional solutions are presented in Table 3. A three-dimensional solution was chosen based on the pattern of diminishing stress values. It was checked against a four-dimensional solution for interpretability. The three dimensions were interpretable, and scale values were bipolar, as expected (Davison, 1981).

Table 3

Stress Values for Nonmetric Multidimensional Scaling of 54 Items

Dimensionality	Stress (Kruskal's Formula 1)
2	.25
3	.17*
4	.13
5	.11
6	.09

*Number of dimensions chosen

To use the scaling results to group items into subscales, items with high absolute scale values on all three dimensions were dropped, as were items without any high absolute scale values. These items were judged too ambiguous or vague, respectively, to assign to a subscale. A total of four items were dropped. The remaining items were assigned to one or two of three subscales, according to the dimension on which the largest absolute value(s) appeared. Multidimensional scaling acknowledges that the same stimulus may elicit reactions from more than one perspective (Young, 1987). Consistent with this concept of dimensionality, six items were allowed on two subscales.

The characteristics of the three subscales based on the multidimensional scaling solution are presented in Table 4. Results indicated that internal consistency reliability ranged from .67 to .80. Two of the three subscales were additive, indicating no person-by-item interaction which would interfere with subscale use. However, the broadness of the concepts made it difficult to specify what a high or low score on one of these subscales would actually mean.

Table 4

Characteristics of Subscales Based on Multidimensional Scaling of 54 Items

Subscale	Content	No. of Items	Chronbach's Alpha	Additivity*
I.	Reforming the structure of teacher preparation	23	.80	no
II.	Professionalism	16	.68	yes
III.	Teacher education content and pedagogy	16	.67	yes

*Based on Tukey's test of additivity

Two results were apparent. It was possible to construct subscales from a multidimensional scaling analysis that would, with a little revision, meet the necessary statistical criteria. However, the nature of the dimensions was, in this case, too broad to make subscale scores interpretable. It was not possible to say what a high or low score measured. For example, a high score on the subscale based on Dimension One, reform of the structure of teacher preparation, could be interpreted as agreeing that teacher preparation should be longer or more academically stringent or both.

Factor Analysis The matrix of correlations among the 54 items with squared multiple correlations on the diagonal was subjected to principal axis factor analysis. The reduced correlation matrix was analyzed because factors underlying common variance were the latent variables of interest. Table 5 presents the eigenvalues, which led to choosing a five-factor solution. Harris-Kaiser rotation of this solution yielded five interpretable factors and loadings

Table 5

Eigenvalues from Factor Analysis of 54 Items Principal Axis Solution, Using Squared Multiple Correlations for Prior Communality Estimates

No. of Factors	Eigenvalue
1	9.26
2	2.76
3	1.89
4	1.72
5	1.41*
6	.98
7	.95
8	.69
9	.61

*Number of factors chosen

for each item. Interfactor correlations ranged from -.05 to .31; all but two values were .16 or less. The factors were relatively independent of each other and approached orthogonality, even though an oblique rotation was used.

To use the factor analysis results to create subscales, items were assigned to subscales based on high factor loadings. Eight items were dropped because of ambiguous factor loadings, either loading in the .20 to .30 range on three or more factors or loading below .20 on all factors. Of the remaining 46 items, two had loadings above .25 on two factors on which they fit substantively, and thus they were allowed on two subscales. Forty-four items were assigned to a subscale defined by one of the five factors. An item was put on a subscale if its factor loading was greater than .25 and it fit the interpretation given the factor.

The characteristics of these five subscales are presented in Table 6. One subscale met the reliability and additivity criteria.

Table 6

Characteristics of Subscales Based Factor Analysis of 54 Items

Subscale	Content	No. of Items	Chronbach's Alpha	Additivity*
I.	Curriculum structure	17	.89	no
II.	Curriculum content	10	.77	yes
III.	Collegiality	8	.74	no
IV.	Negative impact	6	.69	yes
V.	Practical application of research	7	.70	no

*Based on Tukey's test of additivity

Of the remaining four, three met the reliability criterion of .70 but were not additive. One subscale was additive but had an alpha value of .69. Factor analysis had led to the most promising initial set of subscales. Revision of these subscales proceeded by dropping one item at a time, prioritized in order of factor loadings, to see whether all the scales could meet the criteria for usability which had been defined. After an item was dropped, the remaining items were read for content, to make sure content validity was not compromised.

The results in Table 7 show that all five subscales based on factor analysis did, after revision, meet criteria. All five subscales were able to be made additive, without data transformation, and were able to meet an alpha reliability criterion of .70 or better. The Spearman-Brown computations were performed for the sake of comparing the scales, and they are reported in Table 7. It is likely, however, that additional items might not be able to be found, realistically, for the shorter scales. Many items were discarded just to create the subscales as they are. Thus the criterion of .70 was compared with the obtained alphas, not the projected ones.

Table 7

Characteristics of Revised Subscales Based Factor Analysis

Subscale	Content	No. of Items	Chronbach's Alpha	Corrected Alpha*	Additivity†
I.	Curriculum structure	5	.84	.91	yes
II.	Curriculum content	10	.77	.77	yes
III.	Collegiality	3	.70	.89	yes
IV.	Negative impact	5	.70	.82	yes
V.	Practical application of research	4	.71	.86	yes

*Spearman-Brown projection of reliability based on 10 items
†Based on Tukey's test of additivity

Discussion

In educational research, unidimensional, summative scales are commonly used because of relative ease of calculation and apparent clarity of meaning. An attitude, conceived and explained as a measure of level of agreement with a set of items, is intuitively accessible to both readers and researchers. Using summative scales, however, requires sifting multidimensional issues with some procedure that validly sorts items and assigns them to unidimensional scales. The resulting scales must be sensible and accessible to mind, but their statistical properties must not be compromised. Only then can a researcher discuss issues and draw conclusions with confidence.

This study examined three procedures for grouping items: rational organization, factor analysis, and multidimensional scaling. Three different configurations of items resulted. Each of these three configurations was evaluated according to whether

(continued on page 14)

it could provide the basis for reliable, interpretable subscales. Results indicated that with the subscales based on factor analysis, it was possible to refine subscales to meet the criteria of reliability, additivity, and interpretability simultaneously. All three methods gave rise to promising "first draft" subscales. Rational organization did not offer criteria for prioritizing items for subscale revision. Multidimensional scaling resulted in item groupings on which a measure was not easily interpretable. None of the methods led directly to a set of usable, interpretable subscales. In each case, additional effort was required to reduce the number of items on the subscales to get additive scales, composed of items which both functioned together (reliability) and functioned in the same way (additivity).

Many examples exist in the social and behavioral sciences where a set of items is constructed and one methodological technique is applied to group items, without consideration for reliability, additivity, content and construct validity all together. This study strongly confirmed the need to critically examine and refine subscale procedures before any interpretation of data is attempted. Checking alpha reliability and content interpretability are common practices; checking for additivity when subscale scores are to be simple sums of item responses is not common practice. This study's data would have yielded different subscale scores, conveying different information, had reliability and interpretability been the only criteria for subscale construction. It would have been difficult to certify that such subscales really measured the same attitude for all respondents, and thus it would also have been difficult to certify exactly what the attitude in question (the underlying construct) was. Reliability and validity would therefore both have been in doubt.

This study has illustrated a way of arriving at clear, interpretable subscales which can be applied by researchers whose primary interest is the subscale score. Many studies need only be concerned about the statistical qualities of their scales insofar as they ensure data in which the researcher can place confidence and results which he or she can interpret with assurance. Applying the criteria of reliability, additivity, and interpretability in the process of subscale refinement speaks to the same issues which can be addressed by more complex weighting and scaling techniques. Using only items which qualify according to these criteria makes more complicated schemes unnecessary. Straightforward weighting, in turn, makes it easier to define the attitude measured by the subscale.

There is a cost involved with applying these criteria before a scale is defined and disallowing items which do not comply. The cost is lost items. The original 54 items in this study's data set were reduced to 27, a loss of 27 items. Some of them were poor items, but some were well-written items which simply did not contribute to reliable and additive subscales. Whether or not the gain in simplicity of subscale score calculation and interpretation is worth writing and then discarding so many extra items would depend on the particular study in question. Further research would help indicate whether this technique always costs so many extra items, or whether the large number dropped was specific to this survey. It is also necessary to guard against changing content when dropping items. Losing content by removing items was not a problem in this study, but it could be in others, and care must be taken.

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Both Sides Now: Parent Choice

The *Mid-Western Educational Researcher* is presenting two sides to an important issue in education today. From the local to the national level the right of parents to choose the school their children attend is being debated. The President of the United States has made this part of his national agenda for education. William R. Hazard was asked to present the positive side of parent choice. Dr. Hazard is a practicing attorney and a professor of administration and social policy in the School of Education and Social Policy at Northwestern University. Gregory J. Marchant presents the negative side of parent choice. Dr. Marchant is an assistant professor of educational psychology at Ball State University. The authors wrote their pieces independent of each other. Therefore, one position is not a response to the other. We encourage you to write to us with your responses.

Some Thoughts on Educational Choice

By William R. Hazard, Northwestern University

Family choice in schooling may be in mortal danger—it just recently moved onto President Bush's political agenda for the 1992 elections. That fact alone could spell the demise of a good idea whose time may be over long before it is given a fair trial. Building on the resurrected notion of Milton Friedman's voucher scheme and Jack Coons' California Initiative for Family Choice (Coons, 1979), this new variation on the older themes enjoys support from liberals and conservatives of all persuasions and for diverse reasons. Choice in schooling is, at this time, a term of art. A wide range of meanings attach, including open-enrollment across existing district boundaries, across attendance boundaries within districts, open enrollments within a state, vouchers (evidencing the holder's legal entitlement to X amount of dollars) redeemable at public or private schools of the holder's choice, and many more. The mechanics of the choice plans, operative and proposed, vary widely and the boundaries of the choice consequences range across the schooling landscape. To propound or endorse choice in these fluid settings say little; clear delineation of the nature, limitations, and dimensions of the specific choices must give shape to the choices chosen.

This brief statement will attempt clarification of the basic notion of choice in schooling and a sketch of some reasons for current interest in the concepts and issues. There is substantial literature developed over the past two or three decades worth a close examination by serious students. My tongue-in-cheek opening lines hint at what I believe is a more serious problem. Professor Coons and his colleagues have examined the choice issues and designed a plan for California. This plan envisioned the creation and public support of free-standing family choice schools that would operate essentially free of burdensome state regulatory restraints and under regulations responsive to parent preferences. The push in the Coons' plan focused on accessing all children to quality education of choice, *regardless of economic means* of the family. Fiscal savings or at least no greater costs (than now borne by public schools) were visualized by the California Initiative.

In the "debate" sponsored by *The Kappan*, Professor R. Freeman Butts challenged the Coons' plan. According to Butts,

(continued on page 16)

Your School: Love It or Leave It

By Gregory J. Marchant, Ball State University

How could anyone be opposed to parent involvement, free choice, rewarding "good" schools and punishing "bad" ones? According to many reformers, by simply allowing parents to choose the best school for their children American education will be on the road to recovery. Unfortunately there are no simple answers, and a policy that may satisfy some, may hurt others. Parent choice is only a panacea for some. For those who need the greatest help it is a threat, and for educational reform it is a lie.

My position is based on three assumptions regarding public education:

1. Public schools should provide the best education possible for *all* children. Schools are primarily groups of students—not teachers, not principals, and not parents. The primary job of education is to teach children—not reward or punish teachers or principals and not to satisfy parents.

2. Public schools should be run as efficiently as possible. The education of all of the children in the United States is an expensive endeavor. We need to get the most education out of our education dollars.

3. Those students with the greatest needs should have available to them at least as many resources and skilled teachers as those students with the greatest assets. Public education needs to be fair and equitable in providing service to the children. Children on the whole should not be shortchanged in order to benefit a select few.

Having stated these simple assumptions let us consider the impact that parent choice could have. Parent choice advocates suggest that good schools should be rewarded and poor schools should be punished for being ineffective. I have already suggested that although teachers, principals, and parents are all important players, our major concern should be for the children. In particular, I am concerned for the at-risk children. I am concerned about reducing resources to the students who need them the most. These resources are not just tax dollars. The most important resources are human. It is a resource to have motivated achieving students in a classroom. It is a resource to have concerned parents providing their support and airing their concerns about their school and their teachers. Parent choice

(continued on page 16)

Educational Choice *(continued)*

the choice movement is driven by the private schools' determination to tap into public tax support aided and abetted by a strong desire to curb school taxes. The fatal flaw in the voucher-like scheme is its real capacity to retribalize American society. He is worried that the choice plan of Coons would ". . . return a proper government function [schooling] achieved over 200 years to the private markets and entrepreneurs. . . ." (Butts, 1979).

Pushed onto the backburners by the public greed and private cupidity of the 1980s, the issues slept along with our president. There were far more attractive issues of exploding national debt, the military buildup, and the egregious excesses of the Yuppie paradise years. The main ideas of educational choice would not go away. The press for school reform intensified in the mid-1980s, stimulated by numerous national calls for excellence, restructuring and overall reform in our public schools. The historic notions of efficiency (Taylor, 1911) in management were dusted off, given a productivity spin, and fueled a merciless bashing of public schooling. Pockets of choice and choice-colored thinking took root in the fertile ground of public disenchantment with public schooling.

Minnesota adopted a voluntary open-enrollment plan phased in from 1987 through 1991. Except for three districts operating under desegration guidelines, any student can change districts in the state at will (Pearson, 1989). Under the Minnesota plan, according to Pearson, the loss of revenues to those districts losing students could be disastrous. There is no way to avoid the reality that painful dislocations can follow ill-designed choice plans. Such severe dislocations can be avoided and the public interest still be served by healthy competition occasioned by choice. To argue against choice in general by pointing to the problems of a particular plan is silly. The object of family choice is to empower parents to choose among competing schooling options. If a given option is not effective, over time it will lose client support. If a given choice plan is defective and carries harmful side effects, its sponsors should revise the plan to eliminate the defects and retain the choice. We are way beyond the time when informed, concerned parents should be given take-it-or-leave-it public schooling. Most of us as school professionals occasionally think we know what's best for children and parents. And occasionally we do. But the fact is that most parents care as much or more than we do about their children, their schooling, and their children's future and can make excellent choices. Properly informed, most parents do a pretty fair job sorting out options for their family interests.

In its simplest, school choice aims to give all parents the options enjoyed now by the affluent parents. Under smart choice plans, good schools will attract and serve parents and children and bad schools will not. Obviously, the "death" of a school is painful and sad. There is no reason, however, to support ineffective schools *after they have had a fair chance to succeed.* To argue for poor schools is to sacrifice generations of children

(continued on page 17)

Love It or Leave It *(continued)*

allows these resources to be shifted to "better" schools. But what happens to the children left behind? This is a clear case of the rich getting richer and the poor getting poorer. By taking resources from the poor and redistributing them to the rich, public education would be acting as Robin Hood in reverse.

Although there is not a great deal of research to draw upon, there was one extensive study on a parent choice voucher system in Alum Rock, California. What follows are the conclusions presented by Linda Darling-Hammond of the Rand Corporation (1983) to a House subcommittee:

> . . . after four years of extensive bilingual publicity, a quarter of the parents in Alum Rock did not know the voucher system existed, and a much larger proportion did not have accurate information about the program or the specific schools. Parents of low income levels and lower educational attainment were less well-informed than other parents . . . only about 20 percent of students attended schools outside their neighborhoods. The alternatives created by the voucher plan proved most attractive to socially advantaged parents . . . we have no evidence that parent choice results in increased student achievement. Nor do we have evidence that the mere existence of alternatives will provide better educational options, especially for the children we are concerned about here (Chapter I). (p. 75–77)

In a time when many communities are attempting to gain more control of their schools, parent choice works against this effort. If children in a neighborhood are going to several different schools, there is little local ownership of a school.

If the cost to at-risk students in resources and to the community in local ownership is not enough, there is the potential cost and management of student transportation. If all parents are really to have a choice, transportation has to be provided for their children to their school of choice. One can imagine the complexity and cost of a system where four children living next to each other would need to be transported to four different schools in different geographical locations. This would require a substantial amount of instructional money be diverted to transportation (Finch, 1985), which would not seem to be the most efficient or effective way to run schools.

Another question that a number of school districts with magnet or special schools have already faced is, what do you do when there is not enough room in the preferred school for all of the students? What is admission going to be based on? Test scores? This will clearly skim the higher achieving students and likely be biased against minorities. First come, first served? Parents have been known to camp out in lines for several days in order to get their children into the school of choice. This means that children with parents not interested or not able to commit themselves to this kind of practice will be left out.

(continued on page 17)

Educational Choice (continued)

on the altar of the status quo. I'm mindful that the terms used are loaded way beyond reason, but to turn away from parent choice and competitive school options is to condemn all but the wealthier children in most urban settings to highly troubled school experiences. Of course there are bright spots and many well-intended, caring public school people. The fact remains that for whatever reasons, many of these schools admittedly aren't serving many parents and many children. The historic role of public schools as the common denominator of cultural transmission and value development is no longer accepted in many racially, culturally, socially, economically, and politically diverse communities. Perhaps it is time to try some other models.

Nathan (1989) reminds us that we can make informed decisions about school choice. There is a body of scholarship and research that reduces the risk of inadvertent failure and harm when choice plans are undertaken. Nathan (1989) identified three assumptions underlying public school choice:

1. There is no single kind of school best for all students or educations.
2. Controlled competition can help stimulate improvement among schools.
3. Increasing options expands opportunity.

Let me add two more: (4) the effectiveness of choice can be studied fairly and systematically, and (5) until we try carefully designed choice options, we will never know their virtues or their vices. Nathan further opines that consensus is emerging as to key features in choice plans. We do not have to fly blind into the choice setting.

I regret that the published debates about choice seem to exalt stridency and cant above calm, lower-keyed debate. The fiery language on either side of the choice issue doesn't promote thorough examination. Pearson (1989) postulated, for example, that open enrollment may violate provisions in both the Minnesota and the U.S. Constitutions. It seems to me that the Constitutional history since the *Brown* decision clearly demonstrates the flaws of our current non-choice school systems. It's hard to believe that giving parents and children reasonable choices as the form and substance of schooling need be unconstitutional.

Whatever problems that may flow from public school choice plans (and clearly there are many) can be avoided or remedied. Unbridled competition among schools can be cutthroat and hurtful; but competition can be bridled and its benefits enjoyed. The Constitutional barrier to using public funds for private purposes has a hollow ring. The child-benefit doctrine has been with us since the *Cochrane* decision in 1930. If that doctrine (admittedly a legal fiction) has sustained extensive devotion of tax funds to nonpublic school uses, it's no great step to giving the fair share of educational entitlement money to a child via vouchers and let the voucher follow the child. If choice leads to "skimming" the cream from the public schools, bounded choice can prevent that mischief. It is not necessary to argue for decimating public schools in order to support choice. Choice need not lead to wastelands in public schools. There may be some public schools that should wink out. They may not be able to compete on any fair criteria in a choice setting. If so, let them go. Choice need not threaten long-term public school stability. In fact, choice may promote greater stability by clearly offering parents an opportunity to support their school choice. If parents need information to make wise choices, then we give them information. I'll say it again. Whatever problems choice may open, they can be solved by carefully planned and monitored dimensions. If problems arise, then redesign to solve the problem but preserve choice.

Good schooling costs money. It's a serious mistake to think that choice schemes somehow will produce big results without paying the costs. If we go into choice thinking it will save money, the children will pay the price saved for the taxpayers. Choice need not give the sectarian schools access to the public trough. If choice leads to sectarian tribalization, we will all lose. *(continued on page 18)*

Love It or Leave It (continued)

> Unregulated vouchers would result in certain classes of parents not being able to secure the quality education they want for their children if schools are allowed to practice selective admissions of any kind.
>
> (Darling-Hammond, 1983, p. 76)

Parent choice is not a means of improving schools. It is a way to avoid the tough questions of change by allowing the most concerned parents (voters) to leave undesirable situations. "Love it or leave it" was not an appropriate response to those dissatisfied with conditions in the sixties, nor is it an appropriate policy for improving schools. Parents need to be involved. However, involvement is not a one time choice. Parent involvement needs to be an ongoing process to bring about positive change. We need to improve our schools, not abandon them. Educational reform is needed. However, parent choice is not the kind of educational reform which will improve our troubled schools. It is politics, and it is politics for those who need it the least.

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Lessons for Minority Recruitment in Teacher Education

The first issue in teacher education that Mary Kennedy addressed in the May 1991 *Kappan* was that of minority representation in teaching. Attracting and retaining minorities in teaching and teacher education is a growing concern. One large foundation has taken the lead in sponsoring efforts to recruit and retain minorities in the area of journalism. Perhaps they have some ideas that education can borrow.

In a recent meeting, the Knight Foundation debunked many of the major myths concerning minority journalism students by describing the results of some of the programs the foundation has sponsored. The Knight Foundation granted 2.3 million dollars to six institutions in the last four years. These institutions were: The University of Florida, College of Journalism and Communication, Dean Ralph Lowenstein, Directors Helen Aller and Charles J. Harris; University of Missouri, School of Journalism, Dean Dean Mills, Program Director Gail Baker-Woods; San Francisco State, Center for Integration and Improvement of Journalism, Dean Betty Metsger, Center Director John Funabiki; Wayne State University, Journalism Institute for Minorities, Program Director Ruth Seymour; Michigan State University, School of Journalism, Director Stan Soffin; and Florida A&M, School of Journalism, Dean Bob Ruggles. These universities used the grants to establish and support minority journalism programs. At the University of Missouri, a sophisticated marketing plan using direct mail, advertising, and personal contact directed at state high school students has *tripled* the number of prejournalism minority students. At the University of Florida the number of black juniors and seniors in print journalism and advertising was substantially increased by recruiting and providing scholarship support up to $3,000 a year to college freshmen and sophomores and community college students. The professional community has become involved at San Francisco State University's Center for the Integration and Improvement of Journalism where more than 170 Bay Area journalists volunteer as writing coaches and mentors. This summer Michigan State University is offering a one-week college credit program to help minority high school teachers and publications' advisors to better guide their students toward journalism careers. The Florida Agricultural and Mechanical University and Wayne State University also participated in the workshop and have special programs. At the January 1991 Knight Foundation meeting lead by Jim Spaniolo, Knight Foundation Vice President, and Scott McGeehee, representatives of each of the institutions in the minority recruitment programs shared their insights and pooled information. The Knight Foundation's focused funding approach and the meeting's presentation and discussion format provided grant recipients with the opportunity to increase their collaborative efforts. This process also yielded a variety of successful recruitment procedures and retention programs that should be of interest to anyone attempting to increase minority recruitment.

It has often been said that throwing money at a problem will not make it go away. Baker (1991) has suggested that this is not true when it comes to educating the nation's children. The programs of the Knight Foundation indicate that money may also be able to help alleviate some of the problems that occur in the educational system. All of these programs had formative-evaluative designs, which Isadore Newman of The University of Akron assisted in developing. The intent of the designs was to give effective feedback to increase the likelihood of achieving success and providing evidence of that success.

For additional information regarding these successful and innovative programs, one can contact the program directors at their respective institutions or James D. Spaniolo, Vice President and Secretary, Knight Foundation, One Biscayne Tower, Suite 3800, 2 South Biscayne Blvd., Miami, Florida 33131.

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Educational Choice *(continued)*

If we are lucky, educational choice will survive its brutalization at the hands of the politicians and, *after* the national elections, we may be wise enough to try it out.

Notes

1. R. Freeman Butts (1979). Educational vouchers: The private pursuit of the public purse. *Phi Delta Kappan*, September 1979.
2. John E. Coons (1979). Of family choice and 'public' education. *Phi Delta Kappan*, September 1979.
3. Joe Nathan (1989). Before adopting school choice, review what works and what fails. *The American School Board Journal*, July 1989, 28–30.
4. Judith Pearson (1989). Myths of choice: The governor's new clothes? *Phi Delta Kappan*, June 1989, 821–823.
5. F. W. Taylor (1911). *Principles of scientific management*. New York: Harper Brothers.

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RESEARCH ALIVE

Written by Jack Snowman

Should We Forget About Mnemonics?

When I began my doctoral studies 20 years ago, the nature and effectiveness of mnemonic (i.e., memory enhancing) devices occupied a prominent place in the psychological and educational research literature. Hundreds of studies were done to determine which cognitive processes came into play during mnemonic use and the conditions under which mnemonics were most effective. In general, these studies found many mnemonic devices to be quite useful for a variety of memory tasks because they invoked the use of fundamental encoding and retrieval principles. At the same time, several books were published that explained how mnemonics could aid in the recall of academic and non-academic information (like remember the names of the 12 cranial nerves, appointments, speeches, and people's names). Perhaps the most popular of these memory improvement books was one by Harry Lorayne and Jerry Lucas called *The Memory Book* (1974). If memory serves me correctly (and wouldn't it be ironic if it didn't), *The Memory Book* remained on one or another best-seller list for many months. Because of the above-mentioned research findings and the popularity of memory improvement books, teachers were strongly encouraged to teach their students how to formulate and use mnemonic devices.

But that was then. The atmosphere today seems to me to be decidedly different. One of the first indications I received that attitudes about mnemonic use in the classroom had changed was a March 16, 1987, article in the *St. Louis Post-Dispatch* entitled "Memory Tricks? Oh, Just Forget it?" In that article, Geraldine Clifford, professor of education at the University of California at Berkeley, is quoted as saying about mnemonics: "I really don't see much future for them. They're like commencement addresses; their time is past." According to Clifford, more time should be spent on teaching students how to find than how to memorize information. In the same article, Patrick Suppes, professor of philosophy at Stanford University, is quoted as saying: "The emphasis is—and should be—on problem solving, not rote memorization. Problem solving is a lot more difficult than mere memory, and it's a lot more difficult to teach."

While the importance of teaching students the skills of critical thinking and problem solving cannot be denied, the attitude that memorization skills are less important than or irrelevant to higher-order thinking seems to me to be misguided on at least three counts. First, we know that the establishment of a well-organized, meaningful knowledge base from which information can be reliably and accurately retrieved is a prerequisite to effective problem solving. Second, mnemonic instruction should be thought of in terms of the "little idea" vs. the "big idea." The little idea behind mnemonic instruction is that such devices help students reliably recall isolated bits of information in verbatim form. When viewed this way, I agree with the criticism that mnemonics are of limited use. But the big idea behind mnemonic instruction is the lesson that students can and should control the nature of their cognitive activity in order to achieve their academic goals. A well-conceived instructional program in thinking skills will try to teach students that variations in learning materials, test demands, and instructional characteristics require the use of different learning tactics in order to achieve the best possible outcome. Given this view, mnemonic devices can be presented as a type of learning tactic that are ideally suited to certain memorization outcomes. As I have written elsewhere, only in this way can students learn to become strategic learners. Third, recent research has shown that, with some clever modifications, certain mnemonic devices can be more powerful than normal as memory enhancers and can help students understand the relationships among hierarchically organized bodies of knowledge.

The mnemonic device that has garnered the most attention from researchers, and that seems capable of facilitating higher-level outcomes as well as verbatim memory outcomes, is the keyword method. Originally developed as a means of learning foreign language vocabulary, the keyword mnemonic has been shown to aid in the learning of several tasks that require associating one thing with another. When applied to foreign language

(continued on page 20)

Research Alive is a special section of the *Mid-Western Educational Researcher* that is intended to identify some of the significant research that the reader may be interested in.

learning, the technique is fairly simple and involves two steps. First, isolate some part of the foreign word that, when spoken, sounds like a familiar English word. This is the keyword. Second, form an interacting visual image between the keyword and the English translation of the foreign word. I would like to summarize for you four recent studies of its effectiveness. The first two studies constitute an integrated set since they share a common purpose, materials, procedures, and were conducted by most of the same researchers. The last two studies also constitute a set for the same reasons.

In the first study, Martin Rosenheck, Mary Levin, and Joel Levin (*Journal of Educational Psychology*, 1989, Vol. 81, No. 2) examined how well a pictorial/keyword technique helped college students learn both the facts and relationships contained in a botanical taxonomy.

Rosenheck et al argue that the common practice of providing students with a figural box-and-line representation of a scientific taxonomy is likely to be a weak learning aid because it provides no specific means for learning either the connections among the elements of a taxonomy or the specific meaning of each element. The taxonomy used in their study was a four-level plant classification system. The top level, labeled division, contained the box *vascular plants*. This broken down into the subdivisions *angiosperms* and *gymnosperms*. Angiosperms was broken down in the classes *dicotyledons* and *monocotyledons*. Gymnosperms was broken down into the classes *conopsida* and *gnetopsida*. Each class was then broken down into two or three orders. *Sapindales*, *rosales*, and *rubiales*, for example, were the orders for the class *dicotyledons*. All boxes were connected by angled lines to form a typical figural display.

The subjects in this study were randomly assigned to either a mnemonic treatment condition, a taxonomic treatment condition, or a free study condition. Subjects in the mnemonic condition first learned a set of 16 concrete keywords to help recall the names of each plant group. For example, the respective keywords for *angiosperm*, *dicotyledon*, and *sapindales* were *angel*, *dinosaur*, and *sap*. They were then given a booklet that included the botanical name and major distinguishing feature of each plant group and were told to concentrate on learning its structure. To help them do this, each page of the booklet was accompanied by something called a pictorial mnemonomy. These were illustrated representations of the keywords, that, through their placement on the page, approximated the higher and lower positions of the categories in the taxonomy. For example, to illustrate the fact that *dicotyledons* are a class of the subdivision *angiosperms*, students saw a picture of an angel standing on a cloud holding a leash at the end of which, and placed *below* the angel, was a dinosaur. Students were then given a second version of the booklet to read. Although the text of the second version was identical to the first, the students were told now to concentrate on remembering the distinguishing characteristics of each plant group by using a new set of 16 mnemonic illustrations. These pictures combined the same keyword illustrations from the first booklet with details that represented the unique features of that plant group (e.g., a picture of an angel holding flowers to represent that *angiosperms* are flowering plants).

Subjects in the taxonomic condition were asked to first familiarize themselves with the 16 plant group names and then read through two versions of the text, concentrating first on the taxonomic structure and then on the characteristics of each plant group. Version one contained the standard taxonomic figure described earlier as an aid to learning the taxonomy's hierarchical structure. The second booklet contained boxed information (e.g., *angiosperms* produce flowers) as an aid to learning the characteristics of each plant group.

The free study subjects also read the passage twice but were told to use their own methods for learning the hierarchical relationships and the plant group characteristics.

Each subject took four tests. The first two, taxonomy production and taxonomy use, were taken after the initial reading of the passage. The latter two, definitions and problem solving, were taken after the second version of the booklet had been read. All four tests were taken again two days and two months later.

The taxonomy production test required the students to draw a standard taxonomic diagram comprised of plant group names in boxes connected by lines. The taxonomy use test required students to label 40 statements like "All *sapindales* are *dicotyledons*" as true or false. The definitions test required students to provide the identifying characteristic that distinguished each plant group from the others at the same taxonomic level. The problem-solving test required the combined use of classification and characteristic information. Students had to decide which order or orders a "mystery" specimen could be given only one or two of the three necessary distinguishing characteristics.

As expected, the mnemonic group outscored the taxonomic and free study groups by a sizable and statistically significant amount on most of the measures and over most of the time periods, thereby demonstrating its superiority as a means of mastering both the structure of a scientific taxonomy and the characteristics of its members. Although the mnemonic group outscored the taxonomic group on the problem-solving test all three times, the difference was statistically significant only for the two-day delayed test.

In the second study in this series (*Reading Psychology*, 1988, Vol. 9), Mary Levin, Martin Rosenheck, and Joel Levin looked at the relative effectiveness of the "full" mnemonic treatment examined in the first study versus two "partial" mnemonic treatments and a non-mnemonic condition. The original treatment was called full because it contained pictorial/keyword techniques designed to help students learn both the classification system and the characteristics of each plant group. The partial treatments contained pictorial/keyword techniques designed to help students acquire either the classification information or the characteristic information. The reading material, procedures, and criterion measures were identical to those in the first study. The only difference in criterion test administration was the elimination of the two-month delay. Hence, all comparisons are for immediate and two-day delayed testing.

There were four conditions to which 115 undergraduates were randomly assigned. The first condition replicated the mnemonic treatment of the first study. In the second condition, subjects learned the keywords for each plant group and studied the pictorial mnemonomy that accompanied the text in booklet 1 as a way of learning the classification system, but were told to use their own best study method as they read through booklet 2 to learn the plant group characteristics. Subjects in the third condition were given a box-and-line figural taxonomy in booklet 1 and the set of 16 keyword mnemonic illustrations in booklet 2. to learn the plant group characteristics. Subjects in the third condition were given a box-and-line figural taxonomy in booklet 1 and the set of 16 keyword mnemonic illustrations in booklet 2. Subjects in the fourth condition saw the box-and-line figural taxonomy in booklet 1 and were told to use their own study method in booklet 2 to learn the plant group characteristics.

The pattern of results in this study was slightly different than was the pattern for the first study. The statistically significant difference in taxonomy production disappeared although it is worth noting that three times as many students in the mnemonic group produced a perfect taxonomy as did students in the non-mnemonic group (33 percent vs. 10 percent, respectively). The statistically significant difference in taxonomy use was maintained only on the two-day delayed test. The statistically significant difference for the definitions test was maintained on both the immediate and delayed tests. Finally, the statistically significant difference in problem solving was maintained only on the two-day delayed test.

There seems to me to be two broad conclusions that can be drawn from the data produced by these two studies. First, the keyword mnemonic (and perhaps others) can be modified so that it aids in the performance of higher order transfer tasks that depend on accurate retrieval of factual information. This is certainly good news for those who continue to hold mnemonic instruction in high regard. Second, even clever mnemonic devices like the pictorial mnemonomy are not uniformly effective. The mnemonomy works better than alternative techniques only for certain measures, testing times, and types of items.

To give you some idea of the flexibility of the keyword mnemonic, I'm going to turn now to two related studies that examine its effectiveness as an aid to learning fine arts information.

In a three-experiment study (*American Educational Research Journal*, 1988, Vol. 25, No 1), Russell Carney, Joel Levin, and Charles Morrison examined how well an adaption of the keyword mnemonic helped undergraduates learn to associate the names of 30 artists and their paintings.

The purpose of the first experiment was to see how well the mnemonic materials and procedures would help students match artists with their paintings in comparison to a free study group. Subjects assigned to the free study condition were given a booklet that contained (1) a list of the 30 artists' names, (2) photocopies of the artists' paintings with brief titles (e.g., "Man with hoe"), and (3) pictures of the 30 paintings with each artist's last name and brief title typed underneath. They were told to familiarize themselves with the artists' names, paintings, and brief titles of each work, and then use whatever method would best help them associate the name of each artist with his or her painting. Subjects assigned to the mnemonic condition were given a booklet that contained (1) a list of the artists' names and a corresponding keyword (e.g., Millett—mallet), (2) pictures of the artists' paintings accompanied by the artist/keyword name pairs and a sketch that depicted a meaningful interaction between the keyword and the scene (e.g., Millet's painting of a man leaning on a hoe was drawn as a man leaning on a croquet mallet), and (3) pictures of the 30 paintings with each artist's last name and brief title typed underneath. They were instructed to familiarize themselves with the artists' names and paintings and to use the mnemonic materials to help them associate each artist with his or her respective painting.

Each student took two tests. For the first (painting recognition), the student was given the artist's name and had to choose the corresponding painting from a set of photocopies. For the second test, (artist recognition) the student was given the painting and had to choose the corresponding name from a set of 34 names. The results were almost identical for both tests: the pictorial mnemonic group significantly outscored the free study group (by about 86 percent vs. 67 percent).

The second experiment was designed to see how well the previous materials and procedures would help students *recall* artists' names immediately and two days later, and whether a verbal form of the mnemonic would work as well as the pictorial form. The materials for the verbal mnemonic condition were identical to the pictorial materials with one exception: a verbal description replaced the keyword/drawing interaction. The description of the mnemonic picture for the Millett painting was: "Imagine that the hoe is a croquet *mallet*. This man is considering his next shot through a wicket." All students were given immediate and delayed tests of artist recall and artist recognition.

Both the pictorial and verbal mnemonic groups significantly outscored the free study group on the immediate and delayed artist recognition tests, thereby replicating the finding of experiment one and extending it to the use of an equivalent verbal mnemonic. For the recall tests, the only finding of note was that the verbal mnemonic group significantly outscored both the free study and pictorial mnemonic groups on the immediate test.

Experiment three was designed to allow for a more direct comparison of the pictorial and verbal mnemonic groups. With the exception of two changes in the study materials of the pictorial group, all materials, procedures, and tests were identical to those of experiments one and two. As in experiment two, the pictorial and verbal mnemonic groups outscored the free study group on the immediate and delayed recognition tests. There were no effects for the recall tests.

In a follow-up study, Russell Carney, Joel Levin, Avonna Schirmann, and Angie Stika (*Contemporary Educational Psychology*, in press) argued that a multiple keyword adaption of the

(continued on page 22)

the keyword mnemonic could be more effective in certain circumstances for associating artists' names with their paintings. To associate the artist Fragonard with one of his paintings, you would create a multiple keyword that encompasses all or most of the artist's name (as in *frog on air*)and construct a mental image that combines the keyword with an element in the painting. Since the Fragonard painting contained a woman with an outstretched hand, you might imagine a frog hopping from the woman's hand to the water below. When faced with a test, the painting should elicit the image, the image should elicit the keyword, and the keyword should elicit the artist's name.

Carney et al. compared the performance of three groups of college students: a free study group, a single keyword group, and a multiple keyword group. Although all subjects had to associate the names of the 30 artists with their paintings, the scoring and statistical analysis was based only in the 20 artists whose names lent themselves to both single and multiple keywords (e.g., *frog* and *frog on air* for Fragonard). Before beginning the task, all subjects familiarized themselves with the names of 10 of the 20 artists by writing each name six times. This was done to determine the joint effect of familiarity and mnemonic condition on recognition and recall.

The free study group was given a list of the 30 artists' names, a list of the 30 paintings, and told to use their own method to learn them. The single and multiple keyword groups studied a list of the keyword/artist pairs and then viewed for 20 seconds apiece photocopies of each painting accompanied by the keyword and a verbal description of the keyword/painting interaction. Immediately and five days later, subjects took an artist recall test (i.e., write the artist's name given the painting) and an artist recognition test (i.e., match each painting with the artist's name).

On both the immediate and delayed recognition tests, and for practiced items (the artists whose names were written six times) as well as nonpracticed items, the single and multiple keyword groups significantly outscored the control group by about the same amount. The pattern for immediate and delayed recall, however, was different. On the immediate and delayed recall tests, the multiple keyword groups significantly outscored the single keyword and free study groups (who did not differ from each other) but only for practiced items. When nonpracticed items were the criterion, the multiple keyword group significantly outscored only the control group and only on the immediate test.

As with the first set of studies, the data from the two Carney et al. studies illustrate two basic points. First, the keyword mnemonic is sufficiently flexible that it can be modified and applied to a variety of subject matters and criterial tasks. Second, the keyword mnemonic is not a sure-fire, all-purpose learning aid. There is no such thing. Like all learning tactics, the keyword mnemonic works well for some material and outcomes but not others. In the present instance, the multiple version seems to work better than the single version and a do-your-own-thing approach for recall of certain names with which one has had a chance to become familiar. On the other hand, the single keyword, which is simpler and thus more convenient to use, works just as well for name recognition tasks.

In sum, the differential effectiveness of tactics like the pictorial mnemonomy and the multiple keyword mnemonic contains a strong implication for those interested in learning skills training: teach students how to match learning tactics to a particular situation in order to achieve a particular goal. Stated another way, students need to be taught how to analyze a learning situation and formulate an effective learning plan if their behavior is to be truly strategic. When viewed in this light, the answer to the question that serves as the title of this column must be "Absolutely not."

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students are engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

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New Conceptualizations of Intelligence:

An Interview with Robert Sternberg

By Carolyn R. Benz,
University of Dayton

Robert J. Sternberg, IBM Professor of Psychology and Education, Yale University's Psychology Department has developed the triarchic theory of intelligence, which he discussed in this interview. A graduate of Yale and Stanford Universities, his research has dealt with theories of intelligence, individual differences in cognition, thinking and reasoning, problem solving, and multivariate data analysis with latent variables and observable variables. He is a productive writer, having authored approximately 30 books, and authored or coauthored more than 300 articles and book chapters. His most recent book is Metaphors of the Mind *(1990), published by Cambridge University Press.*

B **How did you come to question the traditional definitions of intelligence?**

S I've written for many years about intelligence. As I uncovered anomalies with respect to test scores, I became interested in people with high IQ's who were "losers" and those with low IQ's who performed highly in various areas. Dramatic variations in students applications for graduate programs stimulated my thinking about what, in fact, intelligence really was. Intelligence might not be one and the same thing in all instances.

B **Could you describe your triarchic theory of intelligence for me?**

S Yes. Not only is there the internal world of the individual (learning how to do things, planning, and actually doing things), there's the external world of the individual. This is the context the person must adapt to. Thirdly, there are those things that the individual does, the activities that require both novelty and automatization. I basically see these three, then, as subtheories of intelligence. The first explains what's usually referred to as information processing or cognition, the second addresses how intelligence relates to the context of one's experience or behavior, and the third is a theory that deals with how people select from a wide spectrum of tasks and experiences where intelligence is used. These three subtheories together, I'm proposing, do a better job of explaining what we mean by intelligence than does our traditional way.

B **What do you see as applications for measuring intelligence in these new ways? Are there practical applications particularly for educators?**

S I'll give you an example. Included as one aspect of this conceptualization of intelligence is the ability to use context to learn, for example. Using context to effectively adapt requires thinking. We need to teach thinking skills; infuse thinking into books. We can test these skills. Testing and training go together.

B **Is intelligence testing, then, the testing of thinking?**

S No, not always. Not every thinking process is related to intelligence. Testing intelligence, however, includes testing the ability to think.

B **Tell me more about those individuals who piqued your interest in intelligence, i.e., the "stars."**

S Often people have one well-developed skill, not a wide diversity of skills or abilities. However, they have an extraordinary ability to capitalize on that one skill. They're able to make it work for them to an unusually high level. This phenomenon led me to consider that what we need are more reality-oriented measures—measures of things that relate to the "real world." These behaviors are the kinds of behaviors that relate to all sorts of human performances, not just intellectual abilities.

B **What would be an example?**

(continued on page 24)

S IQ test questions assume that there's only one answer and only one way to the solution to a problem. That's not like life. There is a practical intelligence; such as how to manage yourself, or how to make decisions about your career, for example. Those are kinds of intelligence, too.

B **That reminds me of Seymour Epstein's test of constructive thinking or some of the new ways of defining intelligence that Howard Gardner writes about; that there are multiple intelligences—spatial, musical, logical-mathematical, etc., as well as interpersonal and intrapersonal intelligence. Aren't some of these what we'd call mental health? And, aren't some psychotics geniuses?**

S Well, psychotics could be geniuses. But "no" to your first question—mental health is not intelligence. An anxiety problem could affect your ability to use your intelligence. If a person's mental health is good, they're better able to exploit the ability that they have. We have to distinguish the criteria from intelligence, the thing itself. By this I mean we have to distinguish what we define as intelligence itself from the criteria we use to show evidence of it. Doing well in business, for example, might be evidenced by a salary increase, the number of people who like you, positive personnel evaluations, etc. Having the ability and choosing the most effective business strategies is the intelligence. That's a good example of a "real world" intelligence. Similarly, having a high social intelligence is made up of a certain set of abilities and skills, but might be evidenced by having many friends.

B **So much testing in schools is being mandated by law today. What about the issue of culture bias? Are you concerned about assuring culture-free tests?**

S There's no such thing. One always measures intelligence in a cultural context.

B **For a couple of years at MWERA we've discussed the relative merits of qualitative and quantitative research. How do you respond to the ongoing debate about qualitative and quantitative research methods?**

S I don't think there's one right answer or one right way to conduct research. Qualitative and quantitative research strategies are convergent operations. You need to go where your skills and interests take you. In our profession we have people who I think are exemplary in each strategy.

For a long time we've assumed quantitative data had a higher priority. In IQ testing, for years, we've had all the data in the world. That didn't prevent us from misinterpreting what it measured and misapplying it. We've basically been deceiving ourselves. Hard numbers don't tell you enough. We need both qualitative and quantitative, actually. I think the recent moves by the Educational Testing Service toward expanding the National Teacher Examination to include performance and portfolio components in addition to the traditional paper-and-pencil tests is a very good idea.

B **What's currently needed in intelligence testing?**

S I'd say what's most important is our need for measures that assess real-world intelligence, as well as academic intelligence.

Correlates of Examinee Item Choice Behavior in Self-Adapted Testing

By Phillip L. Johnson, Linda L. Roos, Steven L. Wise, and Barbara S. Plake
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Abstract

This exploratory study looked at examinee item choice behavior in a variant of computerized adaptive testing, called self-adapted testing, which allows each examinee to choose the difficulty levels of the test items that he/she is administered. Examinees who chose more difficult first items (a) initially expressed greater capability and higher confidence, and (b) reported less anxiety just prior to testing and to math in general. Correlations of capability and confidence with item choice decreased with subsequent items on the test. The strategies that examinees employed in choosing items was also investigated with the finding that examinees tended to move to a more difficult level after one or more successes at a particular difficulty level and to a less difficult level after one or more failures at a given level. High correlations were found between the difficulty levels chosen and examinee ability level indicating that examinees showed a strong tendency to choose items that were of moderate difficulty for them.

The advent of item response theory (RT) has made computerized adaptive testing a viable alternative to traditional testing methods. Rocklin and O'Donnell (1987) proposed a variant of computerized adaptive testing, called self-adapted testing, whereby examinees are allowed to choose their own items from among a number of difficulty levels. They compared examinee performance on a self-adapted test with the performances of examinees taking two fixed-item tests from the same 40-item pool. One of the fixed-item tests consisted of the 20 most difficult items, while the other consisted of the 20 easiest items. Rocklin and O'Donnell found that the self-adapted test yielded a significantly higher mean score than either of the fixed-item tests.

There are many questions surrounding self-adapted testing that have yet to be explored. The purpose of this study was to look at a number of these questions about self-adapted testing, especially those concerning the behaviors that examinees exhibit when making item difficulty level choices.

This study was exploratory in nature. The strategies that examinees employ in making difficulty level choices were of primary interest. Are examinees likely to behave in an adaptive manner? That is, will an examinee choose a less difficult item level after answering an item incorrectly and choose a more difficult item level after answering an item correctly as was suggested by Rocklin (1989)? Examinee anxiety and self-perception are important issues in testing. These issues may have an influence on examinee choice of difficulty levels. In addition, what other influences are there on item difficulty level choices?

An additional question concerns the degree of match between an examinee's ability and the difficulty of the items that he/she chooses in a self-adapted test. In computerized adaptive testing, the primary goal of the computer algorithm is to administer items to examinees that match their ability levels, resulting in efficient ability estimation. In self-adapted testing, however, examinees are free to choose whatever difficulty levels they prefer. To what degree do examinees, when administered a self-adapted test, choose items that match their difficulty levels?

Method

Subjects The subjects were 148 students enrolled in an introductory statistics course at a large midwestern university. The subjects included 88 females and 60 males. About 20 percent of the subjects were graduate students, and about 80 percent were undergraduates. Participation in the study was a requirement of the course, and the results were used to determine which students were in need of remediation in basic algebra skills.

Instruments The primary instrument used in this study was a self-adapted computerized algebra test designed to measure student readiness for an introductory statistics course. The items on the test used a four-option multiple choice format, and each examinee was administered 20 items. These items were chosen from a pool of 93 items which tested basic algebra skills. Wise, Plake, Johnson & Roos (1991) provide a detailed explanation of the development of the item pool. The 93 items were ranked according to item difficulty (b) parameters and divided into eight levels of roughly equal size. Each level contained 11 or 12 items. Each time an examinee chose a given difficulty level, an item was chosen randomly, without replacement, from that level.

The test was administered on Macintosh SE/30 microcomputers using a Hypercard program. Prior to the algebra portion of the test, each examinee was given a practice item followed by two questions designed to measure the examinee's level of self-efficacy. The first of the self-efficacy questions concerned perceived capability and read:

> The difficulty level of the sample item was 4, which is moderate difficulty for the items on this test. Now that

(continued on page 26)

you have seen the sample item, how capable do you feel that you can solve the problems on this test?

The examinees provided their answers using a 7-point scale, with 1 indicating "not capable" and 7 indicating "capable." The second question concerned perceived confidence on the test and read:

How confident do you feel that you will do well on this test? The options for the answer ranged from "not confident" to "confident" using a 7-point scale.

After answering each item of the algebra test, the examinees were informed of the difficulty level of the item, whether they had answered correctly or incorrectly and asked to choose the difficulty level of the next item. Since no level contained more than 12 items, examinees sometimes exhausted the items from a particular level. In those cases, examinees were asked to choose an item from another level.

Maximum-likelihood estimation was using to compute an IRT ability score for each examinee. This score was compared to a cutoff value of −.20 to determine those students requiring algebra remediation. The program also computed the testing time for each item and the standard error of ability for each examinee.

In addition to the algebra test, three other instruments were used. Each of these used a paper and pencil format. The Revised Mathematics Anxiety Rating Scale (RMARS; Plake & Parker, 1982) was used to measure examinee mathematics anxiety. The Test Anxiety Inventory (TAI; Spielberger, 1980) was used to measure student anxiety toward taking tests. Three TAI scores were used in this study; the Worry subscale, the Emotionality subscale, and the Total score. The State Anxiety Scale (Spielberger, Gorsuch, & Lushene, 1970) was administered before and after the algebra test to measure situation-specific anxiety of the examinees.

Procedure During the first class session, students supplied demographic information, completed the RMARS and the TAI, and signed up for an algebra test administration time. The students were informed that those who obtained a low score on the algebra test would be required to attend a one-hour algebra remediation session to be held during the second week of class. The students who scored below the cutoff were informed during class after the completion of all testing.

The algebra test was administered in a large room containing 10 Macintosh SE/30 microcomputers. When students arrived for testing, they were seated at a computer and asked to complete the State Anxiety Scale. Next, the examinee was given a few basic instructions concerning use of the computer and he/she started the algebra test. A medium difficulty practice item was administered followed by the capability and confidence questions. The examinee was then asked to choose the level of the first item for the algebra test. Scratch paper and pencils were provided, and calculators were not allowed. No time limit was imposed during testing. Upon completion of the algebra test, the State Anxiety Scale was again administered.

Results and Discussion

Two aspects of the results warrant explanation. First, due to its exploratory nature, a substantial number of correlation coefficients were computed in this study. To perform significance tests on this many correlations would be to encourage the presence of Type I errors. To avoid this problem, the results of significance tests are not reported. Instead, the reader is encouraged to consider the magnitudes of the correlation coefficients, keeping in mind that, for 148 examinees, the standard error of the correlation will be no larger than .08. Second, the difficulty choices made by the examinees in their 20-item tests were restricted by there being only 11 items in some levels and 12 in the remaining levels. That is, after the 11th item choice, some examinees were forced to choose a difficulty level different from that which they had chosen for the first 11 items. Hence, all examinees were able to make unrestricted choices only through the first 11 items.

Descriptive Statistics for the Sample To help orient the reader to the characteristics of the sample of examinees, means and standard deviations were calculated for a number of the variables used in this study. These descriptive statistics, shown in Table 1, contain some particularly noteworthy information. First, the group of examinees passed approximately 74 percent of the items administered. Second, the mean estimated ability value of .18 indicates that the group's ability level was comparable to that of the calibration sample. Third, there was not much difference between the pre-test and the post-test state anxiety levels. Rocklin and O'Donnell (1987) hypothesized that the use of self-adapted testing should decrease examinee anxiety levels. In this study, however, the state anxiety levels showed a small, nonsignificant increase.

Table 1

Descriptive Statistics for the Group of Examinees

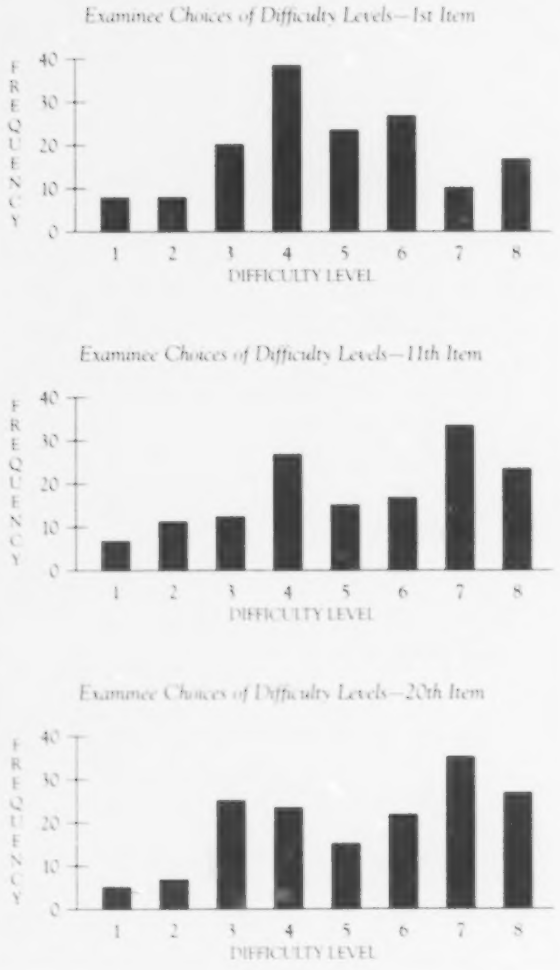
Variable	Mean	Standard Deviation
Age	25.10	7.96
No. of Previous Algebra Courses	2.31	1.04
Years Since Last Algebra Course	6.64	7.62
Math Anxiety	51.70	19.41
TAI (Total)	37.24	11.57
TAI (Worry)	13.03	4.59
TAI (Emotionality)	16.13	5.10
Pre-Test State Anxiety	38.72	10.53
Post-Test State Anxiety	39.59	12.27
Number of Items Passed	14.71	2.56
Estimated Ability (Theta)	0.18	1.07
Standard Error of Ability	0.40	0.12

Distribution of Examinee Difficulty Level Choices While all the difficulty levels were used throughout the test, the group

showed a tendency toward more difficult items as the testing progressed. Figure 1 shows the distributions of difficulty level choices for the 1st, 11th, and 20th items. The mean difficulty levels for these items were 4.79, 5.32, and 5.25, respectively. Inspection of Figure 1 shows a clear shift in the distribution from the 1st item to the 11th item toward the upper categories. After the 11th item, when some examinees had exhausted a level of its items, the distribution showed a little change. The trend toward more difficult items found in this study should, however, be interpreted with caution. If the item pool had been substantially more difficult, an opposite trend may have occurred.

Figure 1

Distribution of Difficulty Levels Chosen for Items 1, 11, and 20



Correlates of the First Item Choice Which variables were related to the examinee's choices of initial difficulty level? Table 2 shows the correlations between the first item choice and eight other variables measured in the study. The strongest correlate was perceived capability followed by perceived confidence. Math anxiety and pre-test state anxiety showed moderate correlations,

Table 2

Correlates of the Examinee's Choices of Their First Item Difficulty Levels

Variable	Correlation
TAI (Total)	−0.18
TAI (Worry)	−0.12
TAI (Emotionality)	−0.19
Math Anxiety	−0.48
Pre-Test State Anxiety	−0.46
Years Since Last Algebra Course	−0.16
Perceived Capability	0.85
Perceived Confidence	0.74

and test anxiety (TAI) and number of years since last algebra course showed relatively weak correlations. To summarize the directions of the stronger correlations, examinees choosing a more difficult first item expressed greater capability and higher confidence, while reporting less anxiety just prior to testing and to math in general.

Although the correlates of the first item choice were not surprising, the correlations of capability and confidence on subsequent choices were interesting. For capability, the correlations for the 1st, 11th, and 20th difficulty levels were .85, .69, and .53, respectively. For confidence, the correlations were .74, .63, and .46, respectively. These decreasing correlations of capability and confidence with item choice were likely due to the feedback provided by earlier test items exerting an increasing influence on difficulty level choice.

Strategies of Item Selection In self-adapted testing, examinees may choose a variety of strategies for selecting the difficulty levels of their items. Rocklin (1989) proposed three common strategies: (1) "flexible," in which examinees choose a higher level after passing an item and choose a lower level after failing an item, (2) "failure tolerant," in which examinees choose a higher level when they pass an item and choose the same level when they fail an item, and (3) "failure intolerant," in which a lower level is chosen failing an item and the same level is chosen after passing an item. Identification of these strategies, however, is complicated by bounded nature of the difficulty level choices. That is, an examinee who passes an item at the highest difficulty level cannot use either a flexible or a failure tolerant strategy because there are no higher levels to choose. (continued on page 28)

In this study, inspection of the data file was used to attempt to describe the strategies that examinees employed. From this analysis, some tentative inferences can be drawn. First, few (if any) examinees showed a strong adherence to a flexible, failure tolerant, or a failure intolerant strategy. Instead, most examinees exhibited what might be termed a "sluggishly flexible" strategy. In this strategy, examinees chose more difficult items after either passing an item or passing a string of several items. Likewise, these examinees moved to a less difficult level after they failed a single item or a set of several items. Instances of examinees choosing a lower difficulty level after passing an item or choosing a higher difficulty level after failing an item were rare. Figure 2 illustrates this point; it shows, broken down by whether the previous item had been passed or failed, the difficulty level choices made by examinees for items 2–11. Note that, regardless of whether the previous item was passed or failed, the most frequent choice was to remain at the same difficulty level.

Figure 2

Frequencies of relative difficulty level choices depending on whether the answer to the previous item was right or wrong. The frequencies are based on choices 2 through 11, taken across examinees.

		SCORE ON PREVIOUS ITEM	
DIFFICULTY LEVEL CHOSEN FOR NEXT ITEM	Higher	306	18
	Same	744	195
	Lower	26	191

There were some examinees who inflexibly chose either the easiest or the most difficult items available. That is, they chose all of the level 1 (or level 8) items until none were left, and then chose level 2 (or level 7) items for the remainder of the test. It is possible that these examinees would have also exhibited a sluggishly flexible strategy if there had been easier or more difficult items in the pool. Further research should be directed toward understanding the choice behavior of these examinees.

Match Between Items Chosen and Ability Possibly the most interesting results found in this study concern the relationships between the difficulty levels chosen and examinee ability level. Note that, according to an item response theory, the location of an examinee's ability estimate is not dependent upon the items administered. Hence, an examinee should expect the same ability estimate regardless of which items he/she chose. In computerized adaptive testing, the computer algorithm's goal is to administer items whose difficulty levels match an examinee's ability. In this study, examinees tended to choose items whose difficulty levels were strongly matched to their ability levels. The correlations between ability and the difficulty levels chosen for the first 11 items ranged from .64 (item 1) to .83 (item 11). The magnitudes of these correlations indicate that, in self-adaptive testing, examinees are aware of how difficult their items should be. This implies a metacognitive awareness on the part of the examinees that warrants further study.

Conclusions

The goal of this study was to investigate how examinees behave when taking a self-adaptive test, and to explore correlates of examinee test-taking behavior. The results of this study indicate that self-adaptive testing may represent a viable alternative to computerized adaptive testing. In addition, the findings of Wise et al. (1991) suggest that examinees may perform better on a self-adaptive test than on a computerized adaptive test. The capability of self-adaptive testing to take into account an examinee's knowledge of his/her affective and motivational state may be important for a valid assessment of examinee ability.

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Evaluation of Applicants for Employment in Higher Education: A Faculty Search Committee's Results and Recommendations

By Mary R. Sudzina and Roger N. Carlsen, The University of Dayton

Abstract

The results of a recent search committee screening to hire new faculty for an entry-level tenure track position found that fewer than one-third of the 41 applicants submitted credentials that met two-thirds of the advertised criteria. Although 80 percent of the applicant pool had attained their doctorates, only 43 percent were qualified in curriculum development, the required area of specialization. Lack of documented expertise in this area eliminated over half of the applicants from further scrutiny. After this initial screening, applicants' potential for prestige (published research) and positive graduate and undergraduate teaching experiences weighed heavily in selecting candidates to be interviewed. The three candidates invited for interviews presented their credentials superbly: qualifications for the position were specifically and clearly articulated in the cover letter, vitae, and personalized letters of recommendation. As a result of this faculty search, recommendations for candidates applying for similar positions in higher education are suggested.

A search committee at a small, private Midwestern university recently reviewed the applications of 41 candidates for an entry-level assistant professor position. The applicants had applied in response to an advertisement in the *Chronicle of Higher Education*. The range of submissions varied enormously with fewer than one-third of the applicants meeting two-thirds of the advertised criteria.

Several assumptions appeared to be at work in this selection process. Some candidates seemed to expect that the search committee members would have sufficient time, insight, and motivation to ferret out the salient features of their application that were not obvious. Faculty search committee members, on the other hand, expected that the applicants would possess a Ph.D., be qualified in the specified content area, and that they would present their credentials in an organized, personalized and professional manner.

Perhaps this mismatch of expectations may simply be a lack of information. A recent review of the literature found scant research on academic selection processes and none that described the differences among successful and unsuccessful candidates who survived selection committee's screening and were recommended for interviews.

The goals of this study were twofold: First, to identify the differences between successful and unsuccessful applicants for entry-level higher education teaching positions and, second, to provide direction and recommendations that contribute to candidates successfully competing in this job market.

A recent review of the literature found few current references to academic hiring practices, and none addressed differences among candidates in the selection process. Most articles lacked an empirical base. They either advised fledgling teachers (Dewey & Gardner, 1983; Kopetskie, 1983; Jarchow, 1981) or surveyed department chairs, search committee members and/or newly hired faculty on what they thought were the characteristics of successful applicants in higher education (Klesges, Sanchez, & Stanton, 1982; Klugh, 1964; McDowell & Mrozla, 1987; Rand & Ellsworth, 1979). Both Perlman (1976) and Shetty (1988) wrote about the job hunt from personal and vastly different experiences as new Ph.D.'s in psychology and economics, respectively. Wilbur (1988) wrote of the importance of having a mentor and publishing at the pre-Ph.D. level.

Several themes emerged from a review of the literature: Competition for academic positions is keen and position openings have not kept up with demand (Klesges et al, 1982; Klugh, 1964; Perlman, 1976; Rand & Ellsworth, 1979; Shetty, 1988; Wilbur, 1988); candidates should apply only for positions for which they qualify (Klesges et al, 1982); the letter of application, resume, and letters of recommendation can be an invitation for further inquiry or a source of immediate rejection (McDowell & Mrozla, 1987; Perlman, 1976; Rand & Ellsworth, 1979; Shetty, 1988; Wilbur, 1988). Teaching mattered (Rand & Ellsworth, 1978) and prestige or the promise of prestige (i.e. publications) was very important (Klesges et al, 1982; Klugh, 1964; McDowell & Mrozla 1987; Rand & Ellsworth 1979; Wilbur, 1988). Communication skills, one's knowledge of subject area, the potential for conducting research, and an ability to fill departmental or institution needs distinguished new faculty hires (Klesges et al, 1982; McDowell & Mrozla, 1987; Rand & Ellsworth, 1979).

Methods

The following research was conducted ex-post-facto to study the differences among successful and unsuccessful candidates recommended for interviews by a faculty search committee.

(continued on page 30)

Employment in Higher Education *(continued)*

Forty-one candidates responded to an announcement in the *Chronicle of Higher Education* (see Table 1).

Table 1

Announcement of Position Found in the Chronicle of Higher Education

Assistant Professor of Education

Secondary Education—Candidates should hold an earned doctorate in education with a strong background in curriculum development and secondary education. Three years experience in elementary and/or secondary schools and oral proficiency in English language are required. Responsibilities will include teaching methods and foundations courses at both the graduate and undergraduate levels. Candidates should be committed to conducting research as well as to teaching.

Appointment and Salary—Tenure track, nine-month appointment, possibility of additional summer teaching, competitive salary.

Application Procedures—Applicants should address inquiries or forward letter of application, curriculum vitae, and a minimum of three current letters of recommendation to: Chair, Department of Teacher Education.

Measures Nine criteria were deduced from the advertisement by the Search Committee Chair. They were:

1. Earned doctorate in education
2. Strong background in curriculum development
3. Three years experience in elementary and/or secondary schools
4. Proficiency in English language
5. Commitment to conducting research
6. Commitment to teaching
7. Undergraduate teaching experience
8. Graduate teaching experience
9. Positive relationship with college students

Candidates received a "1" if they fulfilled advertised criteria, ".5" if they partially fulfilled criteria and "0" if requested information or experiences were missing. A perfect score to fulfill search committee criteria would have been a "9." No effort was made to rank criteria in order of importance.

Procedures and Analysis Candidate application files (letters of application, vitae, and letters of recommendation) were reviewed and ranked on the strength of submitted documentation on each of the nine advertised criteria. This was done independently and informally by the search committee in their selection process. Files were later reviewed by these authors who codified the findings. Interrater reliability exceeded .95.

Descriptive statistics of the sample were developed for each criteria item based on search committee rankings. A frequency distribution of the sum total of each candidate's score was plotted to discover the range of qualifications in this sample. Additionally, a series of 2, 2 group K-mean cluster analyses was used to identify the characteristics between selected and unselected applicants, independent of search committee rankings. Conclusions and recommendations were drawn.

Results

Means and standard deviations were calculated from the search committee's scoring of candidates on the nine criteria (see Table 2).

Table 2

Mean Qualifications of Applicants

	Means	Standard Deviation
Earned doctorate in education	.817	.290
Background in curriculum development	.439	.502
Three years experience in schools	.805	.314
Proficiency in English language	.634	.251
Commitment to research	.317	.429
Commitment to teaching	.707	.353
Undergraduate teaching experience	.695	.431
Graduate teaching experience	.159	.361
Positive relationship with college students	.524	.192

Earned Doctorate Approximately 82 percent of the candidates (n = 33) who applied for the position had earned their doctorate. Then were "all but dissertation," and received partial credit (.5) for this item. Two candidates received no credit: One gave no evidence of doctoral work and another had been "ABD" for over five years and gave no evidence of a completion date in the near future. Of the three candidates selected for interviews, two had obtained their doctorates within the last three years, and the third was expected to finish within the half year.

Curriculum Development Less than half of the candidates (44 percent) had a background in curriculum development and received full credit for this item. Twenty-three candidates showed no evidence of specific knowledge in this area and received no credit. Two of the three finalists specialized in curriculum development, one held a specific degree, taught and wrote on the subject; the other was ABD and teaching in that area. The third finalist was involved in writing and planning curricula in the secondary schools.

Experience in Elementary/Secondary Schools This item fulfills state teaching certification requirements. Twenty-eight candidates (68 percent) had taught a minimum of three years at the elementary or secondary level. Ten applicants received partial credit for elementary/secondary-related activities and

three gave no evidence of teaching at that level. All three interviewees had extensive experience at the secondary level; two were social studies teachers and the third taught English.

Proficiency in English Language Although oral proficiency in English language was stated as a qualification for the position in the initial screening, only written examples of English language use were considered. Ability in English language was reflected in the letter of application, accompanying research papers or articles (if any) and/or an undergraduate major in English. Only 12 applicants earned full credit on this item for clear, organized, well thought-out, prose. Twenty-eight (68 percent) of the candidates were judged to write adequately. One applicant submitted unfocused letter of application with obvious grammatical and semantic errors and earned no credit.

Two of the finalists received full credit for proficiency in the English language. Both were teaching on the college level, gave evidence of extensive writing, and wrote clear compelling letters of application that individually addressed each criteria item mentioned in the *Chronicle of Higher Education* advertisement. Additionally, they both included unsolicited research papers with their application materials. The third candidate received partial credit for English proficiency due to a tersely worded letter of application and was later requested to submit a research paper.

Commitment to Research Ten candidates (24 percent) gave evidence of publication of books or articles in refereed journals. Six others (15 percent) received partial credit for coauthored articles, articles in press, book reviews or articles written but not yet published. Most applicants (n=25) were not published. Full credit was earned by all three finalists for evidence of research. All three had published articles in refereed journals, and one interviewee had two books in print.

Commitment to Teaching Over half of the applicants (n=23) were able to demonstrate that they had been involved with teaching over the length of their professional careers. About 34 percent had been involved in teaching at one time, but not in the recent past. Two applicants gave no evidence of teaching experiences; two others had extensive careers in counseling, rather than teaching. All three of the candidates invited to campus had been cited for their excellence in teaching by students and/or peers.

Undergraduate Teaching Experiences Twenty-six applicants had experience teaching at the undergraduate college level. An additional five applicants worked as graduate assistants, paper graders, or lab assistants. Ten candidates had no direct or indirect experience with an undergraduate college population. Two interviewees had some experience teaching undergraduate classes; the third did not.

Graduate Teaching Experience Six applicants (15 percent) had taught at the graduate level; one candidate received half credit for conducting a graduate-level course in computers for teachers. The overwhelming majority (83 percent) had no graduate teaching experience. None of the finalists indicated in their vitaes that they had taught graduate courses.

Relationship with College Students Indications of positive relationships with college students were found in letters of recommendation. Four candidates received full credit for specific references to their excellent rapport with a college population; 35 applicants were given partial credit based on their potential to deal well with this student group. Only two candidates received no credit because their ability to relate to college students was not mentioned by them or their references.

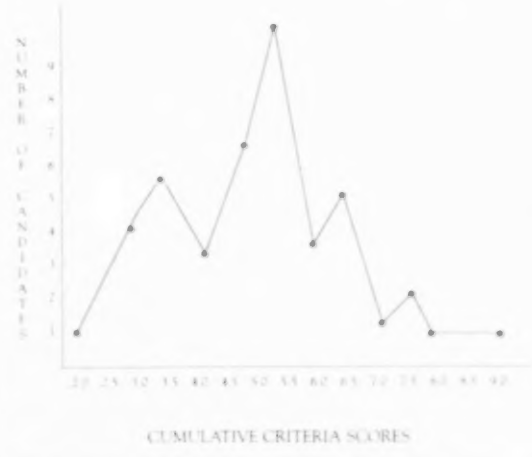
Two of the interviewees received full credit for their ability to relate to college students. These two were currently teaching at the college level and had referenes made regarding their ability to effectively deal with that population. The third interviewee was cited as an excellent secondary teacher with potential to be an outstanding college teacher. Due to the strength of his references, this candidate was given half of a credit for this item.

Range of Qualifications

When individual criteria scores were tabulated, the qualifications of the applicant field ranged from 2.0 to 9.0. The average candidate score was 5.088. The three candidates invited for interviews all ranked within the top third of the sample and scored above 6.5 (see Figure 1).

Figure 1

The Range of Candidate Qualifications



(continued on page 32)

The bottom third of the sample (n = 19) made a weak impression on the search committee. Scores ranged from 2.0 to 4.5. Six of these candidates were ABD and only one was qualified in the area of curriculum development. Of the 11 Ph.D's that applied for the position, only three were qualified in secondary education and curriculum development. Two candidates did not mention Ph.D. level qualifications or a concentration in curriculum.

The middle group, (n = 12), with scores from 5.5 to 6.0, had at least half of the qualifications listed in the advertisement, but displayed them in ways that was often difficult to find. Several criteria such as proficiency in English language, ability to deal with college students, and commitment to teaching and research was gleaned from the candidates' self statements or from letters of recommendations. If strengths were not obvious in those areas, the search committee, for the most part, did not look beyond the written statement. Perhaps some of this group could have been boosted into the top quarter and become finalists if they had been more articulate about their qualifications.

The top third of the group (n = 10), from which the three interviewees were selected, very clearly had most of the qualifications for the position. Scores ranged from 6.5 to 9.0. They overwhelmingly addressed the different criteria items in their cover letters and documented their strengths. Vitaes were professional looking and well-organized. Recommendations tended to be job specific and outstanding.

Cluster Analysis

A hierarchical cluster analysis (Hartigan, 1975) was conducted on the applicant pool to determine whether committee selection and statistical clustering processes would select similar individuals. Because cluster analyses can be forced to create clusters where there are none, a series of two clusters analyses were performed.

After the first cluster analysis, candidates were separated into two groups with 29 (70.7 percent) applicants disqualified and 12 (29.3 percent) maintained. Six criteria items significantly discriminated between selected and unselected candidates: A doctorate, relationship to college students, graduate teaching, undergraduate teaching, commitment to teaching, and commitment to research (see Table 3).

Table 3

Significant Differences Between Selected and Unselected Candidates

	F-Ratio	p
Doctorate	4.34	.044
Relation-college students	11.83	.001
Graduate teaching	10.78	.002
Undergraduate teaching	10.49	.002
Commitment to teaching	16.04	.000
Commitment to research	98.22	.000

The three candidates who eventually received invitations to campus survived the first statistical cut as well as the second cluster analysis in which eight candidates remained under consideration. The differences among the individuals in the final applicant pool was now slight and closely matched search committee's selections. Statistically, differences among candidates in the final cluster were nonsignificant.

Discussion

Although the search committee was asked to evaluate candidates on their ability to meet certain criteria, other factors surfaced and clearly came in to play when making the final interview selections. Armed with checklists of position qualifications, the committee scrutinized each candidate's credentials and selected eight candidates for further consideration. Members lobbied within the committee to gain support for their favorites and to seek out additional information on candidates advocated by other commitee members. Qualitative considerations, such as match with department needs, were critical to candidates being selected for an interview.

After much discussion, inquiry, and several phone calls to verify information, three candidates were selected to be interviewed. Although the committee would participate in the interview process, much of what would now occur would be on the candidate's shoulders—qualities like communication, clarity, focus, competence, interpersonal skills would have to be demonstrated by the invitee. Additionally, faculty, students, and the dean would have input on the selection. Regardless of their ranking on the initial screening, they were all on equal footing as invitees.

Successfully surviving the initial screening, however, was the first order of business. In this initial screening, unfavorable information has double weight over favorable information (Hakel, 1970). Regrettably, much information about hiring practices treats the interview as the first "test" for qualified candidates (Dewey & Gardner, 1983; Kopetske 1983; Jarchow, 1981). In this instance candidates had to make the first cut, which eliminated two-thirds of the applicant pool, and then they had to win advocacy within the search committee among all of the members. This was no easy task.

Thus, while the applications of individual candidates must be initially appealing to attract the favorable attention of at least one committee member, the submission must also be complete and detailed enough to withstand the careful scrutiny of the committee as a whole. Furthermore, each committee member who failed to select a particular applicant now worked to legitimize their initial decision of why they did not initially select the applicant. Conversely, applicants that were put forth by some and rejected by other committee members were now looked at more closely as to why they were initially recommended.

The candidates who clearly had the advantage were those who responded specifically to the advertisement and made the committee members job easier both by presenting clearly marked, professionally looking documents accompanied by personal letters of application and crisp laser printed copies. Successful candidates had clearly delineated their areas of consideration, their dates of employment, and the dates and institutions of their degrees. Personal letters of recommendation wre critical in obtaining committee support and proved especially important for neophyte candidates attempting to establish their potential for college teaching and research as well as their ability to relate to a college population.

Poor quality in the reproduction of resumes, out-of-date recommendations, and unspecific cover letters hurt some of the candidates. Committee members wondered if this lack of attention to detail and professional presentation would carry over to the work situation. Also, as committee members had limited time and resources, they were reluctant to dig further after a poor first impression.

The candidate qualities that appeared to be most important in this initial search committee screening were:

1. Possessed a doctorate in education, or if they would complete the degree in the immediate future.
2. Speciality in a curriculum area or demonstrated knowledge of the content of curriculum.
3. Superior teaching skills.
4. Communication skills.

Later in the screening process when the field was narrowed down, other criteria came to have more impact. The applicant pool was scrutinized as to:

1. Ability to relate to college students, which was found in letters of recommendation or in documentation of previous positive college-level teaching experiences.
2. Undergraduate and graduate teaching ability.
3. Ability to conduct research at the university.

Not to be overlooked was the wide range of credentials that were presented for the same position. Some obvious errors of judgment occurred in the lower level of the sample such as an absence of letters of recommendation or the lack of congruence with the job description. For a large number of applicants, whose scores were in the middle range, qualifications were often ubiquitous. Documentation did not clearly establish their competency in the search committee's mind. The three candidates that were invited for the interviews came from a pool of applicants having scores from 6.5 and above. However, this was not known until the files were coded and clustered. In addition, it should be noted that the three individuals invited for interviews did not possess the top three scores but did fall within the top cluster.

It is reasonable to assume, that any number of these middle candidates with scores from 5 to 6.5 might have been thrust into the cluster for final consideration if they had done several of the following things: Presented a more favorable first impression in terms of application letter, recommendations, and resumes; personalized documentation, clearly articulated their qualifications for the position; and documented material in a way that the search committee could find it and not have to guess at what qualities were present or absent.

Summary and Recommendations

The results of a recent search committee to hire new faculty found that only one-third of the applicants presented credentials that allowed serious search committee consideration. Although 80 percent of the applicant pool had attained their Ph.D.'s, only 43 percent were qualified in curriculum development. Lack of expertise in this area immediately eliminated more than half of the applicant pool. In those that were selected for final interviews, personalized letters of submission, updated resumes, and recent recommendations that spoke to the candidate's strength for the position were pivotal in being selected.

The criteria items that seemed to matter most in the initial screening were the overall match with the institution's needs (doctorate, curriculum specialist, and evidence of teaching experience). In the final selection for candidates to be interviewed, the applicant's potential for prestige (published research) and graduate and undergraduate teaching experience was scrutinized more closely.

There was the general perception that some candidates were more qualified than their submissions indicated and that several candidates could have presented their credential more effectively. Effort and attention to detail for something as important as acquiring a job, especially with all the implications of relocation, thousands of dollars in potential pay, etc., would seem to indicate that increased expertise in this area would be well worth while. There appears to be a need in higher education for training on how to more effectively compete for a job opening.

As a result of this search committee's findings, the following recommendations are suggested for candidates in higher education:

1. Apply for positions in which you meet at least half of the criteria. Search commitees do not expect a perfect match, but they do expect that serious applicants meet most of the qualifications.
2. Demonstrate or document expertise in the area of concentration. Failure to do so may result in immediately being eliminated for consideration.
3. Clearly articulate qualifications in cover letter, vitae, and letters of recommendation. Faculty search committees are not prone to probe further if applicants qualifications are ambiguous.

(continued on page 34)

4. Present credentials in an organized, professional manner. Better marketing skills may have made the difference for 20 percent of the candidates in this applicant pool.

Like a prizefighter, there are rounds to win in the applicant process. Only individuals who survive successive rounds will succeed in the candidate selection process.

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Authors' Notes

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School Psychological Services Within Urban Structuring

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Abstract

Restructuring of large urban school districts places general decision-making responsibilities with local teachers, parents, community members and principals. Delivery of mental health services within the restructured organization demands expertise and specialized knowledge of childhood pathology, legal mandates and intervention treatments. A combination of centralized coordination of school psychological service, blended with a sensitivity to local school-site priorities, will assure the most efficient model for the delivery of psychological service within urban school restructuring.

Educational literature currently reflects a variety of restructuring constructs which are gaining popularity throughout the nation. Site-based management, teacher empowerment, school autonomy and school-based management are powerful concepts defining the merging trends in urban educational structure. Minimal empirical evidence exists, however, to clearly demonstrate the effectiveness of these programs (David, 1989), yet many traditional educational patterns are attempting to mirror corporate management structures that delegate authority and flexibility to school staff (Kanter, 1983).

It should be noted that the notion of site-based management is not a new concept nor a single process. Site-based management describes an educational philosophy that has been around for some time, the belief that local control of schools improves educational quality. One could view site-based management as a response to the numerous calls for reform beginning with *A Nation At Risk* (National Commission on Excellence in Education, 1983). The first wave of these reform efforts tended to be sweeping, centralized approaches to change, while the second wave of reform efforts focused, for the most part, on the individual school. John Goodland (1984) emphasized the need for decentralization and shared participation in the management of schools. While he noted that the significance of the school as a unit for improvement and that those who inhabit the school are the persons who must ultimately affect change, he recognized the need for some centralization, as a system of checks and balances, realizing that authority and responsibility need to be differentiated and distributed across the system.

Within the restructuring model, centralized administration is redistributed through experimental patterns offering a greater degree of decision-making options to the local school level. This type of empowerment frequently involves teacher, parent, community members, and principal (Harrison, Killion, & Mitchell, 1989). The principal functions similar to a Chief Executive Officer (Guthrie, cited in David, 1989), who coordinates the decentralized authority as a site manager, shares power in participative structure and exercises significantly expanded authority and responsibility.

Site-based management philosophy encourages schools to contract with central office personnel for services (Harrison, et al., 1989) after building personnel have established priority at the local level. Centralized staff change from decision-makers to support personnel based on the perceived needs of school-based management teams as they take on roles as facilitators. New responsibilities of central staff include providing technical support and access to information which will enhance site-based and district-wide decision making. Shared decision making is viewed as the vital process in creating an effective school culture (Purkey & Smith, 1985).

Although there exists many different approaches to site-based management, research on the subject supports the fact that roles and relationships at both the central office and school level change. The school board provides direction through broad educational philosophy and mission statements for the district, the superintendent delegates authority and power to the local site level and teachers and principals participate in goal setting site-based decisions ("Task Force," 1986).

Expansion of these restructuring efforts into large urban educational centers involves the critical need to explore competent models of school psychology delivery-service. While the literature is vast with information pertaining to school improvement and organizational change, minimal references are found focusing on the delivery of auxiliary services, specifically mental health services, within the new restructuring models. Will the local site-based management teams have the technical knowledge to oversee and coordinate mental health services or will arbitrary decisions be made that may lack the overall view of psychological service within the total district?

Recent data suggests public schools continue to underidentify and underserve handicapped children throughout the nation (Zill & Schoenborn, 1990). Surveys report teachers are

(continued on page 36)

encountering more pupils with severe learning disabilities, family problems, health problems and high mobility rates.

> In fact, over the last 10 years, the number of children diagnosed as learning disabled has increased 140 percent to about 1.9 million children. While educators argue over the meaning of the term and debate possible reasons for the increase, veteran teachers claim that they have never before seen so many children with problems of comprehension and basic skills in their classes (Reed & Sautter, 1990, p. 7).

New social epidemics of homeless children, children born with drug exposure, abused youngsters, as well as depressed and suicidal youth continue to tax the resources of public schools. These children are desperately in need of competent mental health services that may best be coordinated through a centralized model.

The need for traditional psychological services in an urban setting must be paramount in the design of public school organization. The recently enacted Individuals with Disabilities Education Act (IDEA) supersedes the Education of the Handicapped Act (PL: 94-142) and expands the services awarded to handicapped pupils. In addition, PL: 99-457 mandates diagnostic and program options for pre-school handicapped youth, thus the traditional psychometric skills of school psychologists are indispensable in meeting state and federal mandates and in providing technical assistance for legal defense when local decisions are challenged.

In addition to the traditional psychometric emphasis, contemporary school psychologists have gained expertise in dealing with a variety of emerging trends within the urban realm. Specialization in crisis intervention, social skills training, inservice development, program evaluation, research, and case management are but a few of the new subspecialities of large urban psychology divisions. The days of school psychologists existing only to verify a child's special education eligibility are no longer appropriate. School psychologists will continue to be the leaders of mental health services in the public school setting regardless of the educational structure surrounding their delivery. The method of access and type of service obtained may vary greatly depending on the model employed within the district.

Historically, school psychology "was a blend of many kinds of educational and psychological practitioners, loosely mobilized around a dominant role of psychoeducational assessment for special class placement" (Fagan, 1990, p. 913). Contemporary school psychology attempts to stress prevention, consultation and accountability through research and evaluation while providing the necessary assessment and intervention functions (Fagan, 1990). The methods by which this type of service is delivered are crucial in assuring adequate coverage to all students requiring assistance regardless of the urban restructuring component. A recent field study of parent perceptions of school psychology delivery in an urban setting revealed an overwhelming positive response when an organizational model of centralized service was utilized (Bard & Perry, 1989).

Placement of psychological services within the urban district depends on the politics of the educational system and its historical structure. Models currently in place vary in line staff arrangement and supervision credentials. The following configurations are reported in the literature (Talley, 1990):

> 1. Psychological Services—Separate Department: This organization allows for the most autonomy and opportunity to provide a wide range of services throughout the district. The supervisor of psychological services reports directly to the Superintendent or Assistant Superintendent.
>
> 2. Psychological Services within Pupil Personnel: This structure provides less direct contact with senior staff and thus is not as powerful in distributing the services, depending on the philosophy of the director of pupil services. Often the administrator in charge of the supervisor of psychologists is not trained as a psychologist thus program administration may be curtailed to meet the preconceived needs of the director.
>
> 3. Psychological Services within Special Education: This is perhaps the most narrow of confinements within the traditional urban organizational structure. Independence is sacrificed and psychologists are viewed as gatekeepers for special education identification. Depending on state unit funding allotments, some psychologists are permitted to work only with handicapped youth, disregarding the intense mental health issues of crisis intervention and other nontraditional services needed by regular education pupils.
>
> 4. Psychological Services on a Contract Basis: This model places the entire delivery system outside of the public school domain. Responsibility and supervision of psychologists is removed from the schools and placed in the hands of a business corporation which employs psychologists for full- or part-time employment. This arrangement may promote cost efficiency through the contract bidding procedure, although many problems are encountered, focusing on loyalty, adherence to local procedures (written and unwritten), internal politics, follow-up services, individual competency and professional supervision.

Regardless of the configuration adopted for psychological delivery, close involvement with the building psychologist should be emphased by the site-based management team to assure that building priorities related to mental health services are appropriate and handled in an competent fashion. The building-based school psychologist is in need of free access to faculty and students in order to monitor intervention plans and student progress.

building-level intervention assistance teams are often formed to staff at risk children and to develop appropriate behavioral and learning strategies. For this reason, open and ongoing communication between teachers, administrators and the school psychologist should be stressed when restructuring plans are designed.

In summary, the question of whether or not the local site-based management team is the most informed group to make decisions of such far-reaching legal, social, and ethical dimensions as those involved in school psychological delivery service remains to be seen. While the shared decision-making process may prove to be an excellent model when decisions about budget, staffing, and curriculum, are needed, the expertise required to implement federal and state mandates and to orchestrate the overall need for mental health services in large urban districts is most likely better managed through the central office administration of psychological services.

"Central office must continue to make some decisions to ensure equity, balance, and uniformity (Harrison, et al., 1989, p. 57)" even if the site-based management concept is utilized. The equity, balance and uniformity of psychological services is best displayed when the model of delivery encompasses the independence to operate without internal constraints or special interest encumbrances.

When planning the access of mental health services within an urban reorganization model, careful review of the following issues is suggested:

1. While a variety of information is available relating to site-based management theory and practice, empirical data based research studies are lacking.

2. Equity of auxiliary services throughout the system should be balanced to assure adequate coverage.

3. A site-based management system needs to be composed of checks and balances which includes a careful blend of interdependency between central staff and site-based personnel.

4. The site-based model must define relationships among all members, build in accountability and be sensitive to the equal distribution of all auxiliary services.

5. Mental health services, specifically school psychology, can exist within any public school structure, but will thrive in a structure exhibiting competent and adequate staffing patterns, accurate needs assessment and professional coordination between and among central staff and site-based teams.

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Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

Where is the greatest need for future research in education?

Three areas of research come to mind. First, research establishing clear linkage between teaching *and* learning (as opposed to research on teaching *and* research on learning). Second, research investigating the plight of economically disadvantaged, low-achieving children. In my opinion our schools will never be stronger (or, in the current jargon, "more effective") than they are for our weakest children. Third, research on schools and classrooms which takes into consideration the complexity of schools and classrooms and uses analytical techniques that are of similar complexity.

—Lorin Anderson, University of South Carolina

Curriculum reform in the junior high and senior high school years. *—David Berliner, Arizona State University*

Naturalistic intervention studies that include teacher learning (e.g. of research-based teaching and learning strategies) *and* student learning. *—Hilda Borko, University of Maryland*

On the collective experiences of school children across the 13 years of compulsory schooling.

—Christopher Clark, Michigan State University

In ways to make perceptible changes that have the largest potential payoff. We do too many things for little result. We should be using all our skills—reading, looking, listening, research, and using common sense to judge, i.e., by results. For example, I believe the kinds of studies that Tom Good did in the late seventies, which took as a sample classroom teachers who had up to five years of consistently high-achieving students and studying carefully what they do is a good model. Perhaps widening the scope of outcomes included in identifying "successful" teaching is now in order. *—Lyn Corno, Teachers College Columbia*

How to support the development of the human being in school settings. *—Edward Deci, University of Rochester*

The greatest need for future research in my estimation is expanding the ways in which we think about the nature of cognition and the social forms through which it is stimulated, practiced, and developed. Our views of cognition are tied much too closely to the use of language and number.

—Elliot Eisner, Stanford University

The greatest need is clearly in the area of change: how it can be planned and facilitated at institutional, programmatic, and individual levels. *—Thomas Guskey, University of Kentucky*

Research and development directed toward the creation of high-stakes assessment devices aimed at defensible educational targets. *—James Popham, UCLA*

Components of the morally effective school.

—Kevin Ryan, Boston University

Longitudinal studies are needed to examine the result of teacher preparation models. What are the experiences necessary to work effectively with diverse populations? How do four-year and five-year programs differ when context is held constant? What are the required components of effective mentoring systems, i.e., what is working? *—Jane Stallings, Texas A&M University*

To help us understand the required environment for having to be a good citizen in a democratic society.

—Ralph Tyler, Center for Advanced Study in Behavioral Sciences

Incentives, restructuring, national goals, international comparisons. *—Herbert Walberg, University of Illinois at Chicago*

To move it from the isolation of universities into a model of school-based inquiry that involves a focus on real school problems by teams of university and school researchers.

—Kenneth Zeichner, University of Wisconsin

If you have an interesting question or an educational leader that you would like to bring to our attention, please contact: Gregory J. Marchant, Educational Psychology, Teachers College, Ball State University, Muncie, IN 47306.

MWERA Communication & Update

MWERA at AERA As the wrecking ball was making its first impact against the walls of the Comisky Park baseball field, Bo Jackson was signing with the Chicago White Sox, and educational researchers from across the country were taking the field at the Hyatt and Marriott hotels in the windy city. Members of the Mid-Western Educational Research Association were well represented in the dugout and on the field. More than 100 MWERA members took advantage of special room rates and called the Bismarck Hotel home base, and approximately 50 members did some heavy hitting as participants in conference presentations.

The first evening of the conference MWERA sponsored a twilight doubleheader featuring Carl Huberty, University of Georgia, and Andrew Porter, University of Wisconsin. Huberty expressed concern regarding the quality of training that doctoral students receive in research and statistical methodology, although he is seeing some improvement due to an influx of new faculty. He stated that there needs to be more methodologists serving as coauthors with substantive researchers, and that every manuscript considered for publication should be reviewed by a methodologist. He also noted the poor quality of some new textbooks.

Carl Huberty (left), Andrew Porter

Porter discussed a new committee formed by the National Research Council and National Academy of Science with the goal of establishing the role of the federal government in educational research. He emphasized the very brief history that educational research has enjoyed. He noted how educational research has become much more complex, more practitioner-oriented, and more interdisciplinary. Porter stated that we need to make an investment in educational research that reflects the importance we place on education. He suggested one or two percent of the budget, which would be a mammoth increase, would still be shy of the eight percent spent by businesses. He urged that more grants should be field initiated and not directed by the government. He also suggested that too much moeny goes to centers instead of individual researchers, and that there needs to be more stability in research priorities.

(L-R) Adria Karle-Weiss, John Pohlmann and Jack Snowman

Rick Brown, Ralph O. Mueller, and Paula Dupree

Friday evening Adria Karle-Weiss took the plate—and passed it to her guests as she hosted a MWERA party. Attendance was very good as guests filled her suite and spilled out into the hallway during the seventh inning stretch before AERA winded down for the weekend.

Overall it would appear that MWERA has a strong team that can play, and research, with anybody in the country. It is sure to be quite an event when the MWERA All-Stars assemble in Chicago again in October for the MWERA annual meeting. Plan to be there.

1991 MWERA Election Results

A. Officers Elected

Office	Successful Candidate	University	Term of Office
1. Vice-President and 1992 Program Chair	Richard Pugh	Indiana U.	1991–92. Automatically moves in as President Elect, President, and Past-President in following years.
2. Member-At-Large	Sharon McNeely	NE Illinois U.	1991–93
3. Association Council Members	Thomas Andre	Iowa State Univ.	1991–93
	Sonya Blixt	Kent State Univ.	1991–93
	Alice Corkill	Univ. of W. Ontario	1991–93
	MaryAnn Flowers	Univ. of Toledo	1991–93
	John Pohlmann	S. Illinois Univ.	1991–93
	E. Jane Williams	Columbus Public Schools	1991–93
	Jane Zaharias	Cleveland State Univ.	1991–93

B. Resolution on: (a) Dues Increase: Yes ($18 regular, and $10 student, effective January 1992)
(b) Calendar Changes: Yes (End of Annual meeting starts new Term of Office)

MWERA Communication and Update *(continued)*

Special TIP Issue on Evaluation MWERA member James Altschuld, The Ohio State University, served as the guest editor of the Winter 1991 special issue of *Theory Into Practice*. The issue, "Educational Evaluation: An Evolving Field," investigates educational evaluation with respect to several key areas, including changes in purpose and methodologies; trends in the teaching of evaluation; evaluating teaching in higher education; classroom observation; state and local initiatives; and mandated competency testing. Individual copies are available for $6 from the College of Education Business Office, 174 Arps Hall, 1945 North High Street, Columbus, OH 43210.

Important Contributors The editors of the *Mid-Western Educational Researcher* would like to express their thanks to everyone who submitted a manuscript for publication. If your manuscript was not accepted, we want to thank you for thinking of us, and we encourage you to submit work to us again. We would also like to express our gratitude to the following professionals for reviewing papers over the past year. It was obvious that a great deal of time and effort was put into the reviews, and many of these individuals reviewed several papers with very tight time constraints. Thanks to: Robert Brennan, American College Testing Program; Lawrence Gerstein, Ball State University; Betty Gridley, Ball State University; Judson Harmon, Wisconsin Department of Public Instruction; Donald Jones, Ball State University; Mark Kiselica, Ball State University; Dennis Leitner, Southern Illinois University; William Loadman, The Ohio State University; Jay Price, University of Wisconsin–Stevens Point; Ulrich Reitzug, Ball State University; Marcia Summers, Ball State University; Harolyn VanEvery-Filson, Ball State University; and Roy Weaver, Ball State University.

Catastrophe and Chaos Theory *(continued from page 6)*

Chaos theory provides insight into biology and medicine, economics, ecology, epidemiology, metallurgy, physics, chemistry, and many other fields. Without claiming an exhaustive review, Gleik (1987) lists over 300 references and citations on chaos theory and its avenue of expression, fractal geometry. Chaos explains how cardiac arrhythmias and epileptic seizures propagate. It demonstrates why efforts to inoculate a population against disease sometimes result in an increase in cases the next season. It describes how adding new roads to relieve traffic congestion can result in longer travel times, and what happens when metal breaks and water freezes. Chaos may provide important insights into mood states and how individuals undergo abrupt ideological conversions or tenaciously cling to irrational ideas in the face of evidence to the contrary. It explains why experimental error is inevitable and knowledge of any system, no matter how seemingly trivial the system, is forever incomplete.

The overall aim of this note is to suggest that catastrophes may be thought of as a special case of chaotic behavior (as a circle is a special case of an elipse), more specifically, a representation of what happens at the chaotic boundaries. "Chaotic" serves to describe the system—the "macrobehavior"—"catastrophic" describes what happens as a result of the inherent chaos in the system, or the "microbehavior." The cusp catastrophe example given might also be mapped onto the "bifurcation" fractal (Figure 1) that is sometimes used to model the population dynamics in a predator-prey relationship or with increasing food supply or fecundity. Reading from the left, the population remains steady at increasing levels of X until a certain value, then a bifurcation appears. There are now two equally probable population sizes (the Y coordinate) for that value of X. A catastrophe has occurred at the bifurcation. It is interesting that no matter how much one "magnifies" the bifurcation in an effort to see where it "really" starts, it forever recedes from view. One has knowledge

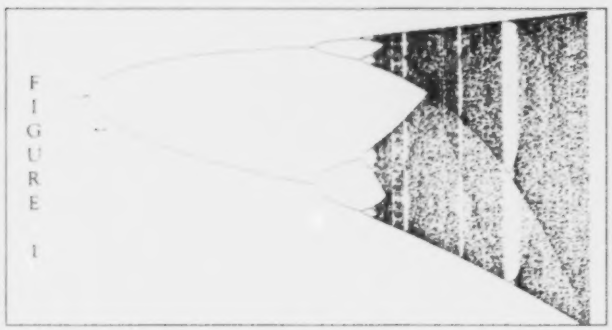

FIGURE 1

of prior events and later events, but the catastrophe itself remains modestly invisible. It is at this point the dog fights or flees. "Adding anger to a frightened dog" leads to one path, "adding fear to an enraged dog" leads to another. The rest of the figure is not relevant to this note, but represents what happens as a behavior system becomes more and more "driven." At some point on the X axis, the Y variable becomes chaotic, but within limits.

The aim of this note is not to reconcile catastrophe and chaos theory, but simply to share some thoughts that, at best, have some heuristic value.

References

D'Costa (1991). Catastrophe Theory and Catastrophes in China's Civil Service Examinations. *Mid-Western Educational Researcher*, 4(1), 2–4.

Gleick, J. (1987). *Chaos: Making a new science*. New York: Viking Penguin Books.

[1] Anyone who has unintentionally jibed a sailboat in a following wind has vivid firsthand knowledge of a cusp catastrophe.

MWERA Research Exchange

Educational research can be a demanding as well as rewarding endeavor. Even the smallest of projects requires a great deal of knowledge and skills. It is not always easy to find a colleague with your research interests. Sometimes a few extra subjects would make a big difference. In some cases it would be helpful just to compare notes concerning references.

In an effort to mediate the knowledge and skills of its membership, the *Mid-Western Educational Researcher* is requesting its members to complete the form below and return it by October 14. A directory will be published in the Winter 1992 issue. You may indicate one *or* two specific areas of interest (please use concise working that includes information such as grade level, subject matter, research approach, etc.). This information may be edited due to space limitations.

Name _____

Address _____

_____

Specific Research Interest #1 _____

_____

(Please check all that apply)

- ☐ I can provide information and references in this area
- ☐ I can provide access to subjects in this area
- ☐ I can provide skills in analysis or design in this area
- ☐ I am seeking a co-author and/or assistance in this area
- ☐ I am seeking additional information in this area
- ☐ I am seeking research design or statistics information
- ☐ I need additional subjects in this area
- ☐ other _____

Specific Research Interest #2 _____

_____

(Please check all that apply)

- ☐ I can provide information and references in this area
- ☐ I can provide access to subjects in this area
- ☐ I can provide skills in analysis or design in this area
- ☐ I am seeking a co-author and/or assistance in this area
- ☐ I am seeking additional information in this area
- ☐ I am seeking research design or statistics information
- ☐ I need additional subjects in this area
- ☐ other _____

Please return this form by October 14 to: Gregory J. Marchant, Educational Psychology, Teachers College, Ball State University, Muncie, IN 47306-0595, or bring it to the MWERA annual meeting October 16–19.

The University of Akron

William E. Klingele, dean
College of Education
Akron, OH 44325-4201

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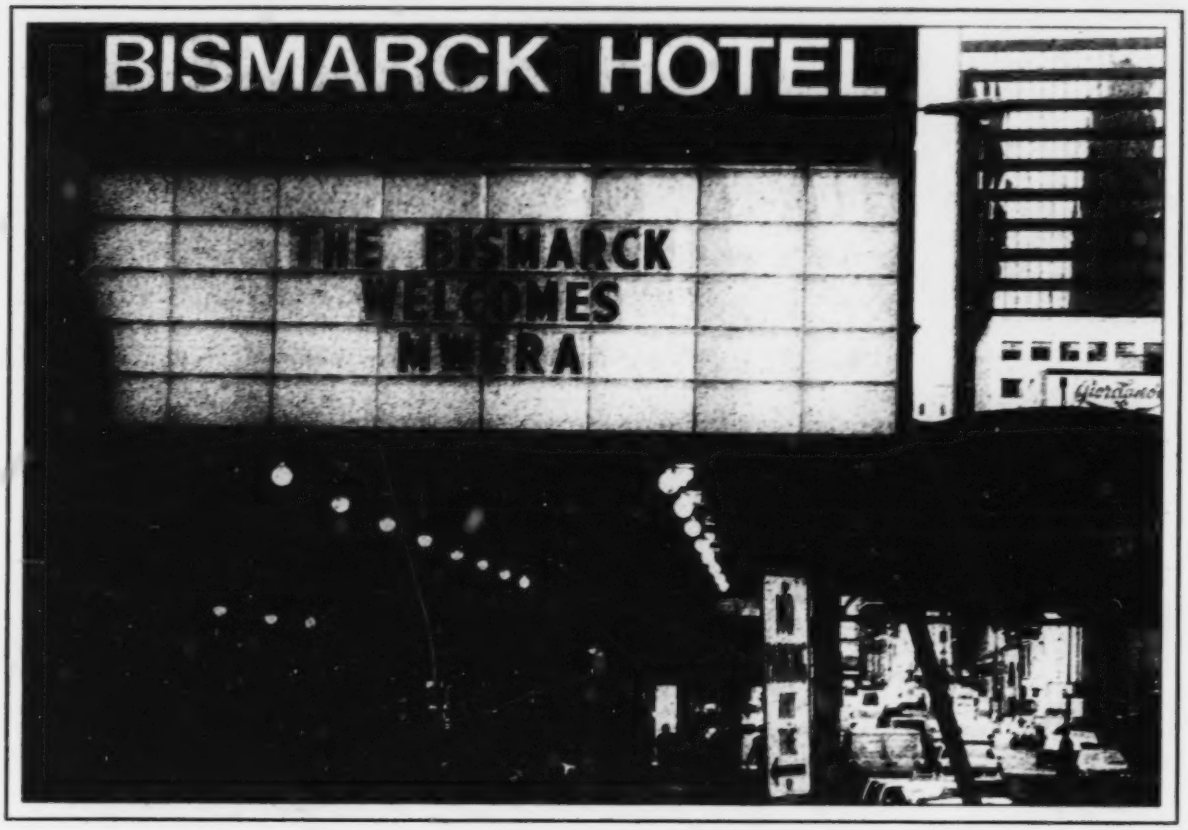

Special Program Issue

October 16–19, 1991

ED 342420

MWERA Communication & Update

The *Mid-Western Educational Researcher* is now among periodicals deposited in the Library of Congress. In addition, all substantive articles from the *Mid-Western Educational Researcher* are now indexed in ERIC's CIJE. When you are considering a place to submit your *MWERA* papers or other manuscripts for publication, consider your *Mid-Western Educational Researcher.*

Information for Contributors to the Mid-Western Educational Researcher

The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Gregory J. Marchant
Educational Psychology
Teachers College
Ball State University
Muncie, IN 47306-0595

or

Isadore Newman
Office of Educational Research
College of Education
The University of Akron
Akron, OH 44325-4205

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Program Orientation

Welcome to the 1991 program. It is big, boasting nearly 200 presentations; it is unique, introducing a number of new activities; and it is traditional, retaining the many events that make our conference special. A brief description of conference highlights follows.

A New Beginning

The 1991 conference begins a day earlier than usual. Following the preconference training workshops on Wednesday afternoon, the conference kicks off Wednesday evening with an **Invited Presentation**. **Joel Levin**, University of Wisconsin-Madison, and Editor of the *Journal of Educational Psychology*, presents *Tips for Publishing and Professional Writing* from 8-9 p.m.

The conference ends on a new note, too. The customary Presidential Address and Business Meeting are absent from Saturday's agenda. Instead, a full slate of **Saturday Sessions** runs from 9 a.m. - 1 p.m. Please make your travel arrangements in line with this revised schedule.

Invited Speakers

Another unique feature is the added number of invited speakers with conference-wide appeal. **Joel Levin**, in addition to his Wednesday evening address, makes the traditional Keynote Address Thursday at 9:45 a.m. The topic is *Pictorial Strategies for Learning and Instruction*.

Annemarie Palinscar, University of Michigan, presents *Enhancing Scientific Reasoning Through Collaborative Problem Solving* in a special Thursday evening session from 5-6 p.m.

Carole Ames, University of Illinois at Urbana-Champaign, makes the traditional luncheon address on Friday afternoon. Her topic is *Enhancing Student Motivation*.

A special Friday evening session features **Michael Pressley**, University of Maryland, who presents *What It Takes to Get the Nation's Children to be Good Readers: Issues and Methods* from 4:30-6 p.m.

There is more in the way of invited sessions. Several divisions have arranged invited addresses scheduled throughout the conference.

Professional Development

Three new events are included to facilitate professional growth. On Friday, conference registrants can visit **Exhibits** and **Meet the Editors** of several professional journals. Exhibitors will display books and other educational materials. The editors will describe their journals and discuss topics such as hints for publishing and trends in educational research.

On Saturday, consecutive sessions pertaining to **Multicultural Education** are scheduled. One of these is an invited address by **Richard A. Shweder**, University of Chicago, who presents *Are the Pilgrims Your Forefathers and Other Problems of Multicultural Education*. A second invited address, *Research Dimensons of Multicultural Education*, is by **James Boyer**, Kansas State University.

The professional development of area **school personnel** continues as a primary emphasis of the MWERA conference. Conference programming reflects this emphasis by scheduling relevant sessions in the evening and on Saturday. A training workshop entitled *Teaching Learners How to Learn* is presented by **Kenneth A. Kiewra**, University of Nebraska, Wednesday evening from 4-7 p.m. Invited addresses are scheduled for Wednesday, Thursday, and Friday evenings. In addition, several sessions related to teaching and learning are scheduled for Saturday. Special registration rates are available to area school personnel. Contact Program Chair, Kenneth Kiewra, for details (402-472-3233).

Social Opportunities

As usual, the 1991 program is brimming with social activities. The executive committee hosts a **New Member Welcome** Thursday at 9 a.m. First-time conference attendees will be introduced to the organization in general and to the conference in particular.

Midwest Hospitality greets all conference participants Thursday, Friday, and Saturday mornings. Join friends for coffee and pastries.

The traditional **Crackerbarrel Social** is from 6-8 p.m. on Thursday. Piano accompaniment is again provided by **Roger Bruning**, University of Nebraska.

Friday night is the **President's Reception** beginning at 9 p.m. Wine and beer are complementary.

The reception should break up in time for the inaugual **Along the Lake Shore Shuffle**. This low-key run (walking and crawling are options, too) is approximately 2 miles long. It begins around 7 a.m. Saturday, near the Chicago Yacht Club.

Chronological Summary of Events

Wednesday, October 16

12:00-7:00 p.m.	Preconference Training Workshops
8:00-9:00 p.m.	Invited Address, Joel Levin

Thursday, October 17

8:30-9:45 a.m.	Midwest Hospitality
9:00-9:45 a.m.	New Member Welcome
9:45-10:50 a.m.	Keynote Address, Joel Levin
11:00 a.m.-4:50 p.m.	Sessions
5:00-6:00 p.m.	Invited Address, Annemarie Palinscar
6:00-8:00 p.m.	Crackerbarrel Social

Friday, October 18

7:30-9:00 a.m.	Midwest Hospitality
9:00 a.m.- 4:00 p.m.	Exhibits
9:00-10:50 a.m.	Sessions
11:00-11:50 a.m.	General Business Meeting
12:00-1:50 p.m.	Luncheon, Invited Address by Carole Ames
2:00-4:20 p.m.	Sessions
2:00-4:00 p.m.	Meet the Editors
4:30-6:00 p.m.	Invited Address, Michael Pressley
9:00 p.m.-????	Presidential Reception

Saturday, October 19

7:00 a.m.	Around the Lake Shore Shuffle
7:30-9:00 a.m.	Midwest Hospitaltiy
9:00 a.m.-1:00 p.m.	Sessions
9:00 a.m.-1:00 p.m.	Special Sessions on Multicultural Education

1991 Program Committee

Many people helped plan the 1991 conference. A special thanks to the following:

Program Chair
Kenneth A. Kiewra, University of Nebraska

Program Assistant
Mary E. Weiss, University of Nebraska

Division Chairs
A. **E. Jean Harper**, Wright State University
Wenifort C. Washington, University of Akron
B. **Alice Darr**, Kent State University
Sarah E. Peterson, Northern Illinois University
C. **Alice J. Corkill**, University of Western Ontario
Gregory Schraw, University of Nebraska
D. **Ralph O. Mueller**, University of Toledo
Leslie E. Lukin, University of Missouri
E. **Jennifer T. Parkhurst**, University of Nebraska
S. Alvin Leung, University of Nebraska
F. **Fred Buddy**, Spelman College
Nelson Strobert, Lutheran Theological Seminary
G. **Mary R. Sudzina**, University of Dayton
Joan S. Timm, University of Wisconsin-Oshkosh
H. **Carolyn R. Benz**, University of Dayton
Richard C. Pugh, Indiana University
I. **Bunny Pozehl**, University of Nebraska
Patricia B. Mullan, University of Michigan
J. **M. Cecil Smith**, Northern Illinois University
William E. Loadman, Ohio State University
K. **Mary Ann Flowers**, University of Toledo
Charlene M. Czerniak, University of Toledo

Workshop Coordinators
Carolanne Kardash, University of Missouri
Stephen L. Benton, Kansas State University

Meet the Editors Coordinator
Carolanne Kardash, University of Missouri

Local Coordinator and Exhibits Coordinator
Sharon McNeely, Northern Illinois University

Registration Coordinators
Cathy A. Pohan, University of Nebraska
Julie McGowan, University of Nebraska

Midwest Hospitality Coordinator
Adria Karle-Weiss, Akron, Ohio

Graphic Artists
Kenneth Jensen, Travis Wagner, University of Nebraska

A special thank-you to all of you who reviewed proposals, to Charles Anderson (Executive Officer) and to Executive Committee Members Leitner, D'Costa, Plake, Price, Williams, Anderson, Marchant and Newman.

Association Business

Association Executive Committee

Immediate Past President
Dennis W. Leitner, Southern Illinois University

President
Ayres G. D'Costa, Ohio State University

President-Elect
Barbara S. Plake, University of Nebraska

Vice President
Kenneth A. Kiewra, University of Nebraska

Secretary
Jay R. Price, University of Wisconsin-Stevens Point

Member-at-Large
E. Jane Williams, Columbus, Ohio

Executive Officer (ex officio)
Charles C. Anderson, Jr., Northbrook, Illinois

Editors (ex officio)
Gregory J. Marchant, Ball State University
Isadore Newman, University of Akron

Association Council

Donald R. Cruickshank, Ohio State University
Orpha K. Duell, Wichita State University
John Frass, Ashland College, Ohio
Larry Gruppen, University of Michigan
E. Jean Harper, Wright State University
Nancy J. Kadunc, Albion College
John J. Kennedy, Ohio State University
Richard P. Lipka, Pittsburgh State University, Kansas
Gregory J. Marchant, Ball State University
Sharon McNeely, Northeastern Illinois University
Ralph O. Mueller, University of Toledo
Richard C. Pugh, University of Indiana
Robert Rosemier, Northern Illinois University
Joan S. Timm, University of Wisconsin-Oshkosh
Steven L. Wise, University of Nebraska

Election Results

Issue #1: Change of Dates for Term of Office
The term of office for Association Council will begin at the close of the annual meeting of the Association through the next annual meeting.

Issue #2: Membership Dues Increase
Dues for regular members will be raised from $10.00 to $18.00 beginning in 1992. Student membership dues will remain at $10.00.

New Officers
Vice President: Richard C. Pugh, *Indiana University*
Member-at-Large: Sharon McNeely, *Northeastern Illinois University*
Association Council (1991-1993):
Tom Andre, *Iowa State University*
Sonya L. Blixt, *Kent State University*
Alice J. Corkill, *University of Western Ontario*
Mary Ann Flowers, *University of Toledo*
John Pohlmann, *Southern Illinois University*
E. Jane Williams, *Columbus Public Schools*
Jane Zaharias, *Cleveland State University*

Business Meetings

MWERA Association Council and Program Chairs
Thursday, October 17
2:00 - 3:20, Medill
MWERA General Business Meeting
Friday, October 18
11:00 - 11:50, Maximilian

MWERA Executive Council Meeting
Saturday, October 19
1:00 - 3:00, Blackhawk

108

How to Get to the Conference

When coming into Chicago, attendees have a variety of transportation options presented below. Please read these to plan your trip accordingly.

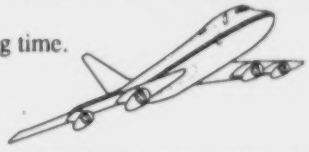
Midwest Airlines, along with Uniglobe Travel, is offering discounted fares to MWERA Conference attendees: 40% off regular coach and 5% off the lowest fares. Call 800-458-5455 for information.

O'Hare Airport to the Bismarck Hotel (3 options)

1) Take a CTA train to downtown for $1.25. Catch the train in the basement of Terminal 3. Take an A or B line. Get off at Lake Transfer. This is in the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block. This is the fastest way during rush hours and the cheapest.
2) Take the Continental Bus for $12.50 one-way or $22.00 round trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.
3) Take a cab for around $20.00. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7-10 a.m., 3-7 p.m.), the ride could take an hour or more. Tip should depend on time and cost; fifteen percent is average.

Midway Airport to the Bismarck Hotel (3 options)

1) Take a CTA bus and train to downtown for $1.25. Catch the Cicero Bus 54B (headed North) on Cicero Avenue, across from the airport. Ask for a transfer for the train when you board. Get off at 22nd and Cicero. Catch the Douglas-O'Hare line train going East (to the Loop). Get off at the Lake Transfer station. This is in the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block.
2) Take a Continental Airport Bus for $9.50 one way or $16.75 round trip. No reservations are required. See the agent at the booth for tickets.
3) Take a cab for around $18.00. See O'Hare information above regarding time.



Driving But NOT Parking Downtown (3 options)

From the North or West

1) Park near a Metra station and take a Metra Train downtown. From the Metra station you will need to take a cab to the hotel. Depending on where you board the train, your ride can be inexpensive. For details call (312) 836-7000. Be certain to find out about return trips, especially on weekends.
2) Park at O'Hare remote (follow highway signs to O'Hare), take a shuttle into O'Hare and follow any of the O'Hare options. Remote parking is inexpensive.
3) Park at a Kiss and Ride at either the Cumberland or the Harlem Avenue exits off of I-94 (the Kennedy). Take the CTA train (See O'Hare option 1). Parking is inexpensive.

From the South or East

1) Park near a Metra Station and take a Metra Train. See 1 above.

Driving And Parking Downtown (4 options)

- Listen to the Radio (670 or 780 am) for traffic reports.
- Remember, rush hour is 7-10 a.m. and 3-7 p.m. in both directions. Travel in the city takes time. There is a lot of construction. Plan at least two hours from the near suburbs to downtown. Plan one-half hour (minimum) in downtown traffic.

1) Coming in on I-94 from the **North**: I-94 junctions with the Kennedy at Irving Park Road. Continue downtown. If traffic is good, it should take 20 minutes from the junction. Beyond the Ohio Street exit, get in the right hand lane. Exit at Washington Street going East. At LaSalle, make a left, go one block and make a right on Randolph to the hotel. After you drop off your baggage you can park your car in a self-park (about $15.00 per day) or have the hotel park it.
2) Coming in on I-90 from the **Northwest**: Follow I-90 downtown. This becomes the Kennedy. It is under construction. Double your normal city travel time. Follow directions of 1 above for exits and parking.
3) Coming in on I-90/I-94 from the **Southeast**: Take the I-90 (Skyway) in. The toll will be $1.50, but it will save you a lot of time. Get in the Express Lanes to downtown. When you approach the LOOP follow the signs saying I-94, Kennedy and Wisconsin. Exit at Monroe street and head east. At LaSalle take a left, then a right on Randolph to the hotel. After you drop off your baggage you can park your car in a self-park (about $15.00 per day) or have the hotel park it.
4) Coming in from the **South** or **Southwest**: Take the I-57 in. This junctions with I-94 and I-90. Read 3 above.

If you are arriving some other way, or have any questions, please call Sharon McNeely at (312) 794-2788 before your trip. She will be happy to help.

Conference Registration Information

General Information

1. The Conference sessions begin Wednesday, October 16, 1991 and end Saturday, October 19, 1991. Please make travel arrangements accordingly.

2. Pre-register for the conference using the following registration materials. Be certain to register for the conference, make hotel reservations, and if interested, register for one or two preconference training workshops. Workshop descriptions are on pages 9-10.

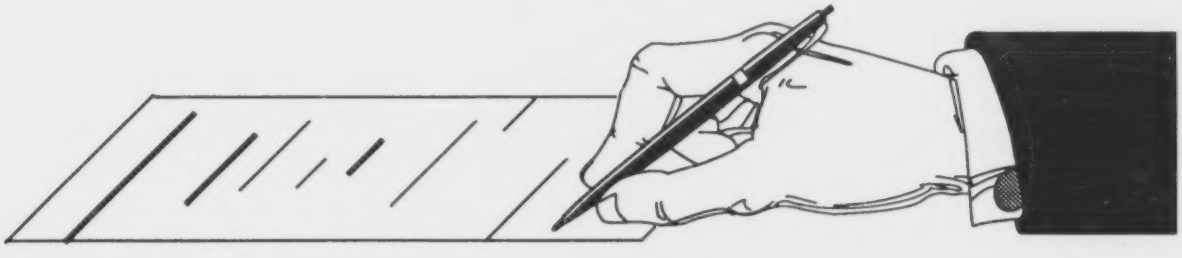
3. All conference participants must be members of MWERA. Please pay 1991 dues if you have not already done so. Now is an excellent time to pay 1992 dues as well. Membership in MWERA includes a subscription to the *Midwestern Educational Researcher.*

4. On-site registration and packet pickup are in the lobby of the Bismarck Hotel at the following times:

Wednesday, October 16, 1991	11:00 - 4:00 p.m.
Thursday, October 17, 1991	8:00 - 4:00 p.m.
Friday, October 18, 1991	8:00 - 4:00 p.m.
Saturday, October 19, 1991	8:00 - 10:00 a.m.

5. Please bring this program with you to the conference. A replacement copy will cost $2.00

6. Please share your conference program and registration materials with co-authors, colleagues and students and invite them to attend.



Mid-Western Educational Research Association
Annual Meeting Registration Form

Please print or type all information
Name _____
Institution _____

Complete Mailing Address _____
_____
_____

Required of New Members Only:
Highest Degree: _____
MWERA Division Preference: _____
(See list next page)
Major Area of Specialization: _____
Telephone
Office: _____ Home: _____

Is this your first MWERA conference? ___yes ___no

ANNUAL MEETING REGISTRATION FEE. Check your membership status below: Amount
_____Graduate Student (pre-registration fee $25, on-site $30)
_____Regular Professional (pre-registration fee $35, on-site $45)
_____Non-member (pre-registration fee $45, on-site $55) $_____

1991 MEMBERSHIP DUES $10 $_____

1992 MEMBERSHIP DUES
Graduate Students $10
Regular Member $18 $_____

PRE-CONFERENCE WORKSHOP(S). Indicate your choice(s) below:
12:00 noon, $15.00 fee
Workshop A _____ or Workshop B _____ $_____
4:00 p.m., $15.00 fee
Workshop C _____ or Workshop D _____ $_____

Total Amount Due: $_____

•Special registration rates are available to Area School Personnel•
Contact Program Chair, Kenneth Kiewra (402 472-3233)

Please make your check payable to:
Mid-Western Research Association (MWERA)
Mail this completed registration form and your check by October 8 to:

Charles C. Anderson
1332 Southwind Drive
Northbrook, Illinois 60062

Hotel Reservation Form

Mid-Western Educational Research Association Conference
October 16 - October 19, 1991
Bismarck Hotel (312) 236-0123
171 West Randolph Street
Chicago, Illinois 60601

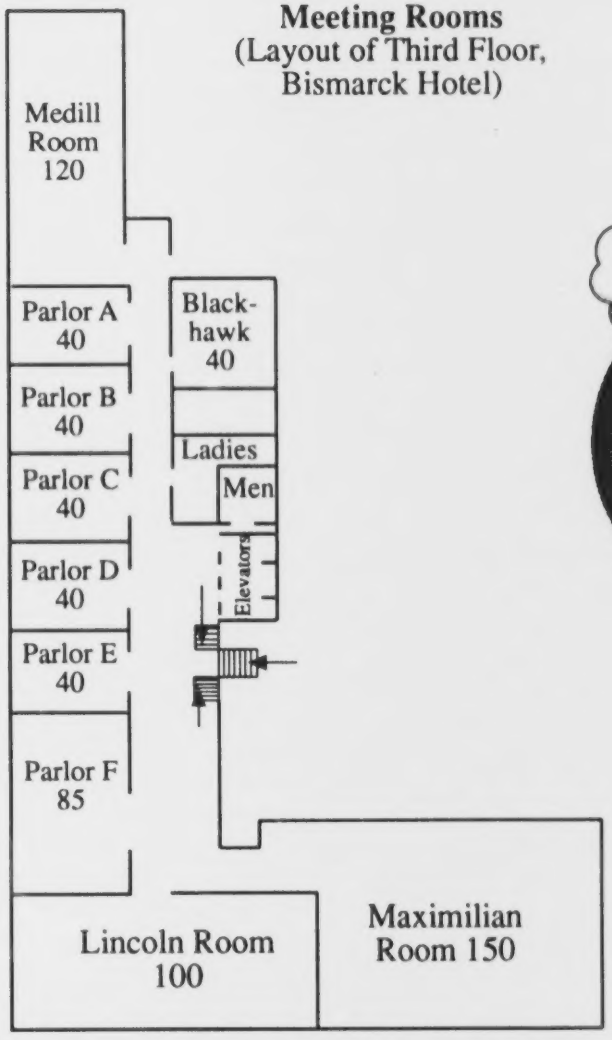
Please reserve:
_____Single Room(s): $50.00
_____Double Room(s): (Double Bed or Twin Beds): $60.00
•Date and Time Arriving: _____(a.m.) (p.m.) • Date and Time Departing: _____(a.m.) (p.m.)
Name(s) _____
Affiliation _____
Address _____

This Hotel Reservation must be mailed to the Bismarck Hotel by October 5, 1991

MWERA Divisions

A. Adminstration
B. Curriculum Studies
C. Learning and Instruction
D. Measurement and Research Methodology
E. Counseling, Human Development and Special Education
F. History and Philosophy of Education
G. Social Context of Education and Motivation
H. School and Program Evaluation
I. Professional and Medical Professions
J. Postsecondary Education
K. Teaching and Teacher Education

Meeting Rooms
(Layout of Third Floor,
Bismarck Hotel)



Note: Regency Suite is on the 18th Floor.

112

MWERA Pre-Conference Training Workshops

MWERA is sponsoring four training Workshops in conjunction with the 1991 Annual Meeting. The Workshops have been peer-reviewed or invited and selected to span a variety of interests. Workshops will begin at 12:00 noon and at 4:00 p.m. on Wednesday, October 16, 1991. A separate registration fee of $15.00 per Workshop will be charged each participant. The number of participants permitted in each Workshop is limited; hence, applications will be honored on a "first-come, first-serve" basis. To apply, indicate choice of Workshop(s) on the preceding Conference Registration Form and include the fee in the total amount enclosed. Only applications and fees received by October 8, 1991 can be guaranteed

Workshop A: 12:00 noon - 3:00 p.m., Parlor A
Social/Multicultural Foundations of Education as a Key Component in an Undergraduate Teacher Education Program: Portfolios, Video Vignettes, and Field Experiences

Presenters:
Tonya Huber, Jeannie Parseal, Scott Hieger, Wichita State University

Workshop participants will: (1) gain a working knowledge of portfolio assessment and field experience components employed in a teacher education program, (2) identify the instructional possibilities of video case literature and video vignettes of teaching episodes in a mediated instruction delivery, (3) review case literature to identify the value of anthropology of education techniques in determining culturally responsive/ responsible pedagogy for diverse student populations, and (4) analyze taxonomic data developed from a ten-year review of literature on cognitive styles, at-risk youth, minorities, and culturally responsible pedagogy models representing the paradigm shift from traditional teaching in American school culture to holistic education.

The workshop will provide interactive experiences involving participants in (1) small group shared inquiry, (2) discussion of case literature video clips of teaching episodes, and (3) analysis of student artifact displays/ graphics.

Anthropology of education research techniques will be exhibited and culturally responsible pedagogy will be modeled. Participant packets will include culturally responsible pedagogy case literature, portfolio handbook illustrations, and bibliographic information.

Workshop B: 12:00 noon - 4:00 p.m., Parlor C
An Introduction to Correspondence Analysis

Presenters:
Hak P. Tam, John Kennedy, Ohio State University

The workshop introduces the history, geometry, algebra, computational features, and computer applications (BMDP & SPSS) of *correspondence analysis* (*CA*)—a relatively new statistical technique that describes complex variable relations through graphical depiction. The workshop is designed for researchers who possess little or no knowledge of this technique. *CA* is presently being used by sophisticated data analysts to explore and summarize crossed-categorical variables within the context of a *correspondence map*, the principal vehicle used in *CA* to graphically display the nature of complex relations. Along with log-linear modeling and logistic regression, *CA* is assuming an increasingly important position in statistical methodology by revolutionizing the analysis of categorical data. Its potential for creative use in educational research and evaluation is unlimited. Due to a lack of knowledge on the part of researchers, however, few applications of *CA* have been observed in educational research. Through lecture, examples, and computer illustrations, the instructors will promote a conceptual understanding of *CA* and describe how this exploratory-graphical technique can be used to great advantage in educational inquiry when an assessment of multiple categorical variables is desired.

Workshop C:. 4:00 p.m. - 7:00 p.m., Parlor A
Seeking Answers and Getting Results: Utilizing Effective Survey Research Strategies in Education

Presenters:
Judith M. Hudgins, Kent State University
Carolyn R. Benz, University of Dayton

Recognizing the potential usefulness of the information available and widespread use of survey in educational research, the purpose of this interactive training workshop is to provide participants with a rationale for using survey methodology and determining whether it is the appropriate means to investigate a particular problem. Presenters will identify key references for survey construction and implementation. Participants will receive information about survey data collection methods, research instruments, sampling and data analysis. Participants will practice question construction and examine a variety of survey formats. Emphasis is on providing practical suggestions that enhance survey completion and return. Methodological aspects of a recent doctoral study with elementary and high school principals which yielded high return (83%) will be discussed. Questions and comments are welcome. An opportunity to address researchers' individual concerns and problem-solving is planned.

Workshop D: 4:00 p.m. - 7:00 p.m., Medill
Teaching Learners How to Learn

Presenter:
Kenneth A. Kiewra, University of Nebraska

Effective instructors help students in two ways. One, they teach in a manner that is learner-compatible. For example, students learn best when information is well organized and mapped onto background knowledge. Learner-compatible instructors therefore present organized information that is integrated with the student's background knowledge. Learner-compatible instruction should result in instruction so effective that students learn despite their own ability and motivation. Two, effective instructors teach students *how* to learn. They embed the teaching of learning strategies within the context of their course, be it history, science, or literature. They thereby produce autonomous, life-long learners who can learn despite poor instruction.

This workshop is aimed at instructors, administrators and parents who want to help students of any age learn how to learn.

Training Workshops

Wednesday, Oct. 16, 12:00-3:00 Workshop A
1.0.0 *Social/Multicultural Foundations of Education as a Key Component in an Undergraduate Teacher Education Program: Portfolios, Video Vignettes, and Field Experiences*
Parlor A

Presenters: **Tonya Huber, Jeannie Parseal, Scott Hieger**, Wichita State University

Wednesday, Oct. 16, 12:00-4:00 Workshop B
1.0.1 *An Introduction to Correspondence Analysis*
Parlor C

Presenters: **Hak. P. Tam, John Kennedy**, Ohio State University

Wednesday, Oct. 16, 4:00-7:00 Workshop C
1.1.0 *Seeking Answers and Getting Results: Utilizing Effective Research Strategies in Education*
Parlor A

Presenters: **Judith M. Hudgins**, Kent State University
Carolyn R. Benz, University of Dayton

Wednesday, Oct. 16, 4:00-7:00 Workshop D
1.1.1 **INVITED WORKSHOP** *Teaching Learners How to Learn*
Medill

Presenter: **Kenneth A. Kiewra**, University of Nebraska

Conference Program

Wednesday, Oct. 16, 8:00-9:00 p.m.
1.2.0 **INVITED ADDRESS** *Tips for Publishing and Professional Writing*
Medill
Presenter: **Joel Levin**
Editor, *Journal of Educational Psychology*, University of Wisconsin-Madison

Thursday-At-A-Glance

	Division										
Time	A	B	C	D	E	F	G	H	I	J	K
8:30-9:45	**Midwest Hospitality**										
9:00-9:45	**New Member Welcome**										
9:45-10:50	**Keynote Address - Joel Levin**										
11:00-12:20	✓	✓		✓			✓				✓
12:30-1:50			✓		✓	✓	✓			✓	✓
2:00-3:20	✓		✓		✓					✓	✓
2:00-3:20	**Association Council Meeting**										
3:30-4:50	✓			✓	✓						✓✓
5:00-6:00	**Invited Address - Annemarie Palinscar**										
6:00-8:00	**Cracker Barrel Social**										

Thursday, Oct. 17, 8:30-9:45
2.0.0 **Midwest Hospitality** *Coffee and Friends*
Maximillian

Sponsored by: Coral Cab Company

Thursday, Oct. 17, 9:00-9:45
2.1.0 **New Member Welcome** *All new members are encouraged to attend this orientation session.*
Parlor F

Host: Executive Committee

Thursday, Oct. 17, 9:45-10:50
2.2.0 **KEYNOTE ADDRESS** *Pictorial Strategies for Learning and Instruction*
Mamimillian
Welcome: **Ayres D'Costa**
President, MWERA
Ohio State University
Introduction: **Kenneth A. Kiewra**
Program Chair, MWERA
University of Nebraska
Keynote: **Joel Levin**
University of Wisconsin-Madison

Suggestions To Presenters

To make conference sessions as helpful and enjoyable as possible, the Executive Committee asks presenters to please follow these guidelines.

1. Send a completed copy of your paper to the Session Discussant so that it is received no later than September 30, 1991. Discussants are not obligated to discuss papers received after this date.
2. Bring at least 40 copies of your paper to the conference. People interested in your paper should receive a copy at the conference.
3. Make overheads and handouts that are attractive and readable.
4. Plan to present, rather than read, your paper in the time allotted.

Thursday, Oct. 17, 11:00-12:20
2.3.0 *Factors and Forces Impacting the Superintendency*
Parlor A
Division A Paper Session

Chair: **William Sharp**, University of Akron

The New-To-Site Superintendent
Ronald Davison, Wichita State University
Jean S. Lavid, Stockton School District

Relationships Between Superintendents and Boards of Education: Year Two of a Longitudinal Study
William Sharp, Isadore Newman, University of Akron

Factors and Issues Affecting Board of Education Decisions: A Case Study
Linda Lyman, Bradley University

Discussant: **Dennis Zuelke**, H-Z Consultants

Thursday, October 17, 11:00-12:20
2.3.1 *Current Issues and Methods in Instruction*
Parlor B
Division B Paper Session

Chair: **Alice Darr**, Kent State University

STAD in College
William J. Gagney, Kimberly Ostrowski, Illinois State University

Closing the Literacy Gap in the American Workplace: A Description of A Research Program for Trainers and Human Resource Specialists
Ronald Morgan, Loyola University of Chicago
Edward Gordon, Roosevelt University
Judy Ponticell, University of Illinois at Chicago

Logo Based Instruction in Geometry
Mian Yusuf, University of Wisconsin-Parkside

Perspective Consciousness: A Summary of Rationale
Sandra J. LeSound, California State University, Fresno

Discussant: **Donald Reyes**, Northern Illinois University

Thursday, October 17, 11:00-12:20
2.3.2 *Statistics and Research Methodology*
Parlor D
Division D **INVITED SESSION**

Status of Educators on the NEA, NCME, AFT Teacher Competencies in Education Assessment

Barbara S. Plake, Jennifer Fager, University of Nebraska
James C. Impara, Virginia Polytechnic Institute

Thursday, October 17, 11:00-12:20
2.3.3 *Potpourri: Motivation Issues in Learning: Contexts for Substance Abuse*
Parlor F
Division G Paper Session

Chair: **Roger Carlson**, University of Dayton

Motivation, Preference for Andragogy or Pedagogy and Reasoning Abilities for Late Adolescents
Jaclyn Huber, Pembroke State University
Carl Basford, Lewis-Clark State College

A Consumer — Contract Model of Instructor Evaluation and Success — Failure Attributions
Peter Brady, Clark State Community College

The Effect of Participation in Activities Outside the School and Family Structure on Substance Use by Middle and Secondary School Students
Van C. Nelson, Jay Thompson, Christina M. Rice, Ball State University
Dr. Van Cooley, Westfield School Corp.

Should Students Work? The Relationship Between Part-Time Work and Substance Useage
Christina M. Rice, Jay Thompson, Jr., Van E. Cooley, Van C. Nelson, Ball State University

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Thursday, October 17, 11:00-12:20
2.3.4 *Reflective Thinking*
Lincoln
Division K Paper Session

Chair: **Rose M. Scott**, Mankato State University

116

The Relationship Between Instructional Domain and the Content of Reflection Among Preservice Teachers
Diana Cantrell, *Ohio State University-Newark*

What do Preservice Teachers Reflect About?
Deborah Bainer, Ohio State University-Mansfield

Using Student Remembrances in a Preservice Teacher Education Course
David Gliessman, Indiana University

Teaching as Inquiry: Helping Inservice Teachers Examine their Theoretical Perspectives on Curriculum
Patricia Wheeler, Indiana University

Discussant: **José Cruz**, Ohio State University

Thursday, October 17, 12:30-1:50
2.4.0 *Issues in Post-Secondary Education: Session I*
Parlor B
Division J Paper Session

Chair: **E. Jane Williams**, Columbus Public Schools

A Study of Faculty and Computer Center Personnel Perspectives on the Issues Surrounding Campuswide Microcomputer Networks
Steven Scott, Pittsburgh State University

Education Faculty Roles: Teaching, Research, Service, Stress, Satisfaction, and Activity
Gregory J. Marchant, Ball State University
Isadore Newman, University of Akron

A Study of the Effectiveness of the Use of Cartoons in Improving Computer Assisted Instruction (CAI): An Experimental Study
Christina Brownlee, **Isadore Newman**, University of Akron

Higher Education Criticism: Do University Faculty Members and Community Professionals Have Different Viewpoints?
Linda Chiang, Anderson University

Discussant: **E. Jane Williams**, Columbus Public Schools

Thursday, October 17, 12:30-1:50
2.4.1 *Individual Differences in Learning*
Parlor C
Division C Paper Session

Chair: **Alice Corkill**, University of Western Ontario
Constraints on the Calibration of Comprehension
Lori Nebelsick-Gullet, **Gregory Schraw**, **Maria Potenza**, University of Nebraska

Cognitive Flexibility: Construct Validation
Ronna F. Dillon, **Timothy S. Brannan**, Southern Illinois University

Test-Retest Reliability of Three Learning Style Instruments
Timothy J. Sewall, University of Wisconsin-Green Bay

The Relationship Between Students' Beliefs About the Nature of Knowledge and Academic Experiences
Marlene Schommer, *Wichita State University*

Discussant: **Alice Corkill**, University of Western Ontario

Thursday, October 17, 12:30-1:50
2.4.2 *Recurring and Emerging Themes in History and Philosophy of Education*
Parlor D
Division F Paper Session

Chair: **E. Jean Harper**, Wright State University

The Ancient Greek Definition of Liberal Education in American Political and Educational Thought
Arthur T. Vrettas, University of Akron

Deindustrialization and the Financial Support of Public Education
Donald P. Spayd, Warren City School District
Charles M. Dye, University of Akron

The Development of Electronic Distance Education Delivery Systems in the United States
Michael Buckland, **Charles M. Dye**, University of Akron

The Dynamics of Educational Systems and Low Achieving Dislocated Students
Don Richard Castle, Ashland University

Discussant: **Fred Buddy**, Spelman College

Thursday, October 17, 12:30-1:50
2.4.3 *Contemporary Research Topics in Counseling*
Parlor E
Division E Paper Session

Chair: **Paula J. Dupuy**, University of Toledo

Descriptive Results from an AIDS Questionnaire: Knowledge About the Disease and Associated Behavior
Paula J. Dupuy, Ralph O. Mueller, University of Toledo

Social Support and Psychological Stress: Relationship to Perceived Risk of HIV Infection in a Population of Gay/Bisexual Men
Paula Britton, University of Akron

A Comparative Investigation of the Responses of Emotionally Disturbed Black and White Adolescent Males to the Thematic Apperception Test (TAT) and the Themes Concerning Blacks Test (TCB)
Dorris N. Cooper, Ronald R. Morgan, Loyola University of Chicago

The Underlying Structure of Spontaneous Casual Thinking: Counseling Implications
Karen D. Multon, University of Missouri-Columbia

Discussant: **Cynthia Boone-Hawkins**, University of Akron

Thursday, October 17, 12:30-1:50
2.4.4 *Moral Education in Different Settings: Families, Home and Youth Organizations*
Parlor F
Division G **INVITED SYMPOSIUM**

Chair: **Joan Timm**, University of Wisconsin-Oshkosh

AESOP in the Classroom: The Use of Literature in Moral Discussions
Joan Timm, University of Wisconsin-Oshkosh

Talking Good: Moral Education through Family Discussion
Marvin W. Berkowitz, Marquette University

Moral Education and Volunteer Youth Organizations
Clark Power, Notre Dame University

Thursday, October 17, 12:30-1:50
2.4.5 *African-American Male Single-Sexed Schooling: What are the Pros and Cons?*
Lincoln
Division K **INVITED PANEL DISCUSSION**

Chair: **Mary Ann Flowers**, Cleveland State University

Panel: **Duvon Winborne**, Cleveland State University
Thomas Midgette, University of Arkansas Fayetteville
Eric Stockard, University of Toledo
Robert L. Jackson, Lucas County Children's Service, Maumee, Ohio

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Thursday, October 17, 2:00-3:20
2.5.0 *Administrative Career Decisions and Recruitment Strategies*
Parlor A
Division A Paper Session

Chair: **Wenifort Washington**, University of Akron

The Strategies and Decision Criteria of School Superintendents in Recruitment of Prospective Principals
Charles Kline, Karen Okeafor, Purdue University

Career-Bound and Place-Bound Superintendents' Attitudes Toward Collective Bargaining
Rich Hoffman, Miami University
John Granger, Edgerton Local School District

The Decision Processes and Criteria Used to Select Building Level Administrators
Karen Okeafor, Charles Kline, Purdue University

Discussant: **Martin Jason**, Roosevelt University

Thursday, October 17, 2:00-3:20
2.5.1 *Issues in Post-Secondary Education: Session II*
Parlor B
Division J Paper Session

Chair: **Albert Bugaj**, University of Wisconsin Center-Marinette County

Financial Exigency as Just Cause for Dismissal of Tenured Faculty in Higher Education: What are the Legal Issues?
Mary Beth Karr, **Edward R. Hines**, Illinois State University

Community Colleges, Four-Year Colleges, and Universities as Providers of Corporate Education
Sheila A. Sorrentino, Kankakee Community College
Edward R. Hines, Illinois State University

Corporate Philanthropy in American Higher Education: An Investigation of Attitudes Towards Giving
Elisabeth F. Meuth, **Isadore Newman**, University of Akron

Discussant: **Susan Brookhart**, Dequesne University

Thursday, October 17, 2:00-3:20
2.5.2 *The Role of Knowledge and Experience in Learning*
Parlor C
Division C Paper Presentation

Chair: **Gregory Schraw**, University of Nebraska

Learning at A Glance: Investigating Efficiencies of External Representations
Daniel H. Robinson, **Gregory Schraw**, University of Nebraska

The Importance of Tacitly Acquired Knowledge in Medical Education
Ronna F. Dillon, **JoLynn Smith**, **Evelyn Jackson**, **Catherine Aubertin**, Southern Illinois University

Assessing Understanding
Buford E. Wilson, Governors State University

The Long-Term Effects of Sex, Interest, and Experience on a Text-Based Approach for Facilitating Conceptual Change in Learning Science
Sharon K. Chambers, **Thomas Andre**, Iowa State

Discussant: **Gregory Schraw**, University of Nebraska

Thursday, October 17, 2:00-3:20
2.5.3 *Career Development and Counseling*
Parlor E
Division E Paper Presentation

Chair: **Diane L. Kjos**, Governors State University

Breaking Ground: A Study of Gestalt Theory and Holland's Theory of Vocational Choices
Paul Hartung, Northeastern Ohio Universities

Perceived Control as a Motivational Variable in Career Maturity
Darrell Luzzo, Johnson County Community College

Gifted High School Students' Attitudes Toward Careers and Sex Roles
Patricia Dunnell, **Linda Bakken**, Wichita State University

Discussant: **S. Alvin Leung**, University of Nebraska

Thursday, October 17, 2:00-3:20
2.5.4 *The Influence of Role in Collaborative Work: First Person Narratives in a Dialogue*
Lincoln
Division K Panel Discussion
Chair: **Marilyn Johnston**, Ohio State University

Panel: **Don Cramer**, Gables Elementary School
Denise Dallmar, Ohio State Elementary
Denise Harrison, Douglas Elementary School
Joann Hoenbrink, Ohio State University

Thursday, October 17, 2:00-3:20
2.5.5 *Association Council Meeting*
Medill

All current and elected association council members and program chairs

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Thursday, October 17, 3:30-4:50
2.6.0 *Shared Decision-Making and Related Factors*
Parlor A
Division A Paper Session

Chair: **William Thiel**, Thiel Enterprises-Consultants

The Adoption of Shared Decision-Making as a Model for Promoting Changes in School Climate and Culture
William Evans, Phedonia Johnson, Geraldine Oberman, Carol Perry, Chicago Public Schools

The Relationship Between Jungian Personality and Situational Leadership
Jess E. House, Dean L. Meinke, University of Toledo

The Relationship Between the Interpersonal Values and Job Satisfaction of School Superintendents
Kenneth Strand, Daniel Schweers, David L. Franklin, Illinois State University

Perceptions of Participative Decision-Making, Professionalism and Job Satisfaction by Teachers in a Site-Based Managed High School in Comparison with Teachers in a Traditional School
Sally Childs, Central-Hower High School
William Sharp, University of Akron

Discussant: **Reene Alley**, University of Akron

Thursday, October 17, 3:30-4:50
2.6.1 *Statistical Techniques*
Parlor D
Division D Paper Session

Chair: **Deborah Buchman**, University of Toledo

Confounding Covariates in Nonrandomized Studies
Shlomo S. Sawilowsky, Wayne State University
R. Clifford Blair, University of South Florida

A Simple Monte-Carlo Order Statistic Test for Unknown Distributions
John Pohlman, Southern Illinois University

Exploratory Multivariate Analysis of Variance: Determining Important Contrasts and Variables
Ronald S. Elliot, Robert S. Barcikowski, Ohio University

The Use of Correspondence Analysis in the Study of Error Patterns
Hak P. Tam, Ayres D'Costa, Vivian Heinrich, Ohio State University

Discussant: **Dennis W. Leitner**, Southern Illinois University

Thursday, October 17, 3:30-4:50
2.6.2 *Research Symposium in Child Development*
Parlor E
Division E Symposium

Chair: **Jennifer Parkhurst**, University of Nebraska

Written Language in Exceptional Male Elementary School Children: A Comparative Analysis of the Learning-Disabled/Gifted
Lawrence W. Sherman, Miami University

Drug-Exposed Children: Critical Instructional Issues
Arlene Adams, University of Wisconsin-Parkside

Psychosocial Functional and Self-Concept of Young Children with Hemangiomas
Cynthia A. Dietrich-Miller, Cleveland State University

Reframing Class Clowns into Type T Persons: Test of a Model
Nelson J. Gordon, University of Wisconsin, Oshkosh

Discussant: **Christy Horn**, University of Nebraska

Thursday, October 17, 3:30-4:50
2.6.3 *Field Experience and Supervision*
Parlor F
Division K Paper Session

Chair: **Sheila M. Kendrick**, Robinson Junior High School, Toledo

The Third Ear Mechanical Device — A Supervision Alternative
Carmen R. Giebelhaus, José Cruz, Ohio State University

Field Placements: Exploring the Problems Involved in Bridging the Gap Between Theory and Practice
Rosemary F. Shiavi, University of Evansville

Attention to Climate: A Case Study of Two Decades of Personalized and Field-Based Teacher Preparation
Diane Hoffbauer, Bill Olszewski, Betty Borchardt, Mankato State University

A Field-Based Introduction to Urban Education at the Middle School
Susan M. Brookhart, Duquesne University

Thursday, October 17, 3:30-4:50
2.6.4 *Instructional Concerns*
Lincoln
Division K Paper Session

Chair: **Sanza Clark**, Cleveland State University

Instructional Preference of Academically Talented Preservice Teachers
Charles E. Skipper, Miami University

The Effects of a Controlled Laboratory Experience on Preservice Teachers' Instructional Behavior
Kim K. Metcalf, Southwest Missouri State University

Perspectives on Learning Oriented Classrooms
Gregory J. Marchant, **Yasser Al-Hilawani**, Ball State University
Isadore Newman, University of Akron

Teaching a Cognitive Learning Strategy: Can Teachers-In-Training Assist Middle School Students to Utilize a Matrix Technique to Form Comparisons, Contrasts and Generalizations?
Ruth Stahler Tompkins, University of Southern Indiana

Thursday, October 17, 5:00-6:00
2.7.0 **INVITED SPEAKER**
Medill

Enhancing Scientific Reasoning Through Collaborative Problem Solving
Annemarie Palinscar, University of Michigan

Thursday, October 17, 6:00-8:00
2.8.0 Cracker Barrel Social
Maximilian

Background piano music by **Roger H. Bruning**, University of Nebraska

Friday-At-A-Glance

	Division										
Time	A	B	C	D	E	F	G	H	I	J	K
7:30-9:00	**Midwest Hospitality**										
8:30-9:50		✓	✓				✓	✓	✓		
9:00-4:00	**Exhibits**										
10:00-10:50				✓		✓		✓			✓✓
11:00-11:50	**General Business Meeting**										
12:00-1:50	**Luncheon - Carole Ames, Invited Speaker**										
2:00-4:00	**Meet The Editors**										
2:00-3:20	✓	✓			✓		✓			✓	✓
3:30-4:20				✓			✓				✓✓
4:30-6:00	**Invited Address - Michael Pressley**										
9:00-????	**President's Reception**										

Friday, October 18, 7:30-9:00
3.0.0 **Midwest Hospitality** *Coffee and Friends*
Maximilian

Sponsored by: Coral Cab Company

Friday, October 18, 8:30-9:50
3.1.0 *Issues in Medical Training and Practice*
Parlor A
Division I Paper Session

Chair: **Patricia Mullan**, Michigan State University

Predictors of Hospital Readmissions Among Non-Institutionalized Elderly
Rosemarie Suhayda, Rush-Presbyterian St. Luke's Medical Center
Jack Kavanagh, Loyola University of Chicago

A Comparison of the Initial Hypotheses of Novices and Experts in Clinical Problem Solving
Larry D. Gruppen, University of Michigan
James O. Woolliscroft

Talking About Sex: Comparisons of Medical Students' and Simulated Patient-Instructors' Ratings of Sexual History Interview Performance
Patricia Mullan, Andrew Zweifler, Fredric Wolf, Lori Dickens, Denise Lenhard, Michigan State University of Michigan

Teaching Pharmacy Students Problem Solving: Enhancing Higher Order Thinking Skills
Suzanne Soled, University of Cincinnati

Friday, October 18, 8:30-9:50
3.1.1 *Helping Students Become Better Learners*
Parlor C
Division C Paper Presentation

Chair: **Bernard M. Frank**, University of Wisconsin-Eau Claire

Older Adults' Implicit Theories About Reading
M. Cecil Smith, Northern Illinois University

Help Seeking and the Need for Assistance Among University Students
Deborah Bainer, Carol A. Jenkins, Ohio State University-Mansfield

Developing a Self-Regulated Learning Inventory: A Preliminary Report and Analysis
Reinhard W. Lindner, Bruce Harris, Western Illinois University

The Effects of Teacher Initiated Interaction with Female Mathematics Students
Roberta A. Fuller, Illinois State University

Discussant: **Bernard M. Frank**, University of Wisconsin-Eau Claire

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Friday, October 18, 8:30-9:50
3.1.2 *Personnel Evaluation*
Parlor E
Division H Paper Session

Chair: **Richard Pugh**, Indiana University

Evaluating Prereferral Systems: What Should be the Component Parts?
Jane W. Andringa, Governors State University
Arthur R. Keller, Kirby School District, Illinois

Educational Reform and Teacher Evaluation
Ralph Darr, University of Akron

A Competency Based Merit Evaluation System for University Faculty
John T. Pohlman, Southern Illinois University

Evaluation of Applications for Employment in Higher Education: A Search Committee's Screening and Selection Criteria
Mary R. Sudzina, University of Dayton

Discussant: **Thomas Schwandt**, Indiana University

Friday, October 18, 8:30-9:50
3.1.3 *Innovative Approaches to Curriculum and Assessment for Gifted Secondary Students*
Parlor F
Division B **INVITED PANEL DISCUSSION**

Chair: **Judy Werbach**, St. Charles Public Schools

Panel: **Dr. Marcelline Barrons**, Illinois Mathematics and Science Academy
Bruce Galbraith, Park Tudor Schools, Indianapolis

Friday, October 18, 8:30-9:50
3.1.4 *Restructuring to Reclaim Middle School Youth at Risk: Culturally Responsible Pedagogy*
Lincoln
Division G Multi-Media Presentation

Chair: **Tonya Huber**, Wichita State University

Presenters: **Tonya Huber, Jeannie Parseal, Scott Hieger**, Wichita State University
Eldon Chlumsky, Wichita, Kansas

Discussant: **Cornel Pewewardy**, American Indian Magnet School, St. Paul, Minnesota

Friday, October 18, 9:00-4:00
3.2.0
Medill

EXHIBITS

Friday, October 18, 10:00-10:50
3.3.0 *Reflections as an Educational Historian*
Parlor B
Division F **INVITED ADDRESS**

Chair: **Nelson Strobert**, Gettysburg Lutheran Seminary

Speaker: **Charles Dye**, University of Akron

Friday, October 18, 10:00-10:50
3.3.1 *Test Validation*
Parlor D
Division D Paper Presentation

Chair: **Luz G. Bay**, Southern Illinois University

Evaluating the Validity of Career Maturity Measures: A Multimethod-Multitrait Analysis
Darrell A. Luzzo, Johnson Community College

Coopersmith Self-Esteem: Two Different Hypothesized Factor Solutions — Both Acceptable for the Same Data Structure
Rich Hoffmann, Larry B. Sherman, Miami University

Discussant: **Patricia B. Elmore**, Southern Illinois University

Friday, October 18, 10:00-10:50
3.3.2 *Reading and Reading Assessment*
Parlor F
Division K Paper Session
Chair: **Susan M. Brookhart**, Duquesne University

The Relationship Between Undergraduate Course Work and Theoretical Orientation to the Reading Process
Mary Ann Wham, Northern Illinois University

Reading Assessment Portfolio Style: A Perspective from the Classroom
Judy Lambert, University of Wisconsin

Friday, October 18, 10:00-10:50
3.3.3 *Teaching Skill Acquisition*
Lincoln
Division K Paper Session

Chair: **Carol L. Muskin**

Using Video and Videodisc Technology in the Teacher Education Classroom: A Research Based Approach
Donald Reyes, Northern Illinois University

Selecting Skills for Teacher Training: The Identification of Critical Teaching Skills
John Laut, Jim Rouschenbach, Melissa Dudley, Ohio State University

Cognitive Learning and the Acquisition of Teaching Skills
David Gleissman, Richard Pugh, Indiana University

Friday, October 18, 10:00-10:50
3.3.4 *Focus on Evaluation of Schools in the 1990's*
Parlor E
Division H **INVITED PANEL DISCUSSION**

Panel: *From the Perspective of State of the Art...*
Daniel L. Stufflebeam, Western Michigan University

From the Perspective of Educational Systems...
Gary Wegnke, Des Moines City Schools

From the Perspective of Preparation of Educational Leaders...
Darrell Root, University of Dayton

Friday, October 18, 11:00-11:50
3.4.0 *General Business Meeting -- All MWERA Members*
Maximilian

Friday, October 18, 12:00-1:50
3.5.0. *Luncheon*
Walnut Room

Speaker: **Carole Ames**, University of Illinois at Urbana-Champaign

Title: *Enhancing Student Motivation*

All registrants are invited to attend.

Friday, October 18, 2:00-4:00
Meet the Editors
Medill

Friday, October 18, 2:00-3:20
3.6.0 *Organizational and Policy Issues*
Parlor A
Division A Paper Session

Chair: **Marilyn Grady**, University of Nebraska

Assessing Personal and Organizational Predictors of Managerial Commitment in Schools
Hyun-Seok Shin, University of Wisconsin-Madison
Pedro Reyes, University of Texas at Austin

Academic Sanctions: Implications for Higher Education Policies
S.M. Winchip, E.R. Hines, Illinois State University

The Job Satisfaction — Life Satisfaction Relationship for Educators: A Cross-Cultural Study
Patricia Klass, Noreen Michael, Illinois State University

Discussant: **Donald McCarty**, Madison, WI

Friday, October 18, 2:00-3:20
3.6.1 *Current Issues for At-Risk and Non-At-Risk Preschool and Kindergarten Children*
Parlor B
Division B Paper Session

Chair: **Jack K. Barshinger**, DeKalb Community Schools

Marvelous Me — Preschool Edition: Enhancing Self Concept Development in Preschool Children
Kara Sullivan, Temple
Ruth David, National-Louis University

Childrearing Expectations of Parents of At-Risk and Non-At-Risk Preschoolers
Therese Shepston, Bradley University

The Use of Kindergarten Screening Scores to Identify the Need for Reading Intervention: A Logit Regression Study
Jayn H. Crail, Ashland Public Schools
John W. Fraas, Ashland University

Enhancing the Achievement of Minority Children: An Afterschool Program that Works
Lynne Hudson, David Bergin, Carolyn Chryst, Mary-Jo Abascal-Hildebrand, University of Toledo
Mark Resetar, Regent University

Discussant: **Harvey N. Switzky**, Northern Illinois University

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Friday, October 18, 2:00-3:20
3.6.2 *A Cross Institutional Analysis of Characteristics of Entering Freshman*
Parlor C
Division J Symposium

Chair: **William Loadman**, Ohio State University

Presenters: **Susan M. Brookhart**, Duquesne University
Craig DeVille, Ohio State University
Timothy Miller, Morehead State University

Discussant: **William E. Loadman**, Ohio State University

Friday, October 18, 2:00-3:20
3.6.3 *Research and Practical Issues in Parenting*
Parlor E
Division E Paper Session

Chair: **Thomas Parish**, Kansas State University

Help for Developing Responsible and Disciplined Students
Donald A. Boyd, Thomas Parish, Kansas State University

Lighthouse Parenting Scale: Some Evidence of Construct Validity
Elmer A. Lemke, Mark D. Godley, Margaret Raabe, Illinois State University

Beliefs as Predictors of Parenting Skills
Barbara Duffield, University of Toledo

Friday, October 18, 2:00-3:20
3.6.4 *Sequential Program Structures for Preservice Socialization in Technology and Cooperative Learning*
Parlor F
Division G Symposium

Chair: **Douglas M. Brooks**, Miami University

Sophomore Year Educational Psychology: The Application of Cooperative Learning and Audiotape Technology to Enhance Course Content and Student Conceptual Level
Mary R. Sudzina, University of Dayton

Junior Year Methods Block: Using Cooperative Learning and Videotape Technology to Facilitate the Acquisition of Classroom Management Skills
Robert Shearer, Miami University

Senior Year Internship: The Applications of Cooperative Learning and Videotape Technology for Improved Professional Conflict Resolution
Douglas M. Brooks, Miami University

Friday, October 18, 2:00-3:20
3.6.5 *School-University Partnership in the Academic Preparation of Prospective Teachers*
Lincoln
Division K Panel Discussion

Chair: **Wendy Stack**, Chicago Teachers' Center Northeastern Illinois University

Panel: **Nancy S. Green, Elaine C. Koffman**, Northeastern Illinois University
Jolie Sklair, Shirley Woodley, Wolfgang A. Mozart Elementary School

Friday, October 18, 3:30-4:20
3.7.0 *Guessing and Cheating on Multiple-Choice Exams*
Parlor D
Division D Paper Session

Chair: **Lori Nebelsick-Gullet**, University of Nebraska

Error-Similarity Analysis and Other Methods for Detecting Cheating-by Copying in a Multiple-Choice Exam
Luz Bay, Davis Eubanks, Southern Illinois University-Carbondale

Are Rasch Item Parameter Estimates Still Invariant Across Distribution Characteristics When Guessing is Simulated?
Ken W. Godin, Kent State University

Discussant: **Paula L. Woehlke**, Southern Illinois University

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Friday, October 18, 3:30-4:20
3.7.1 *Themes in Gender and Bias Reflected in Literature*
Parlor E
Division G Paper Session

Chair: **Robert Rosemier**, Northern Illinois University

The Perils of Nancy Drew: Social Identity in Popular Children's Fiction
Linda Christian-Smith, University of Wisconsin-Oshkosh

Bias in Children's Storybooks: Gender, Race, Class and Ethnicity
Joan S. Timm, University of Wisconsin-Oshkosh

Perceptions of Sex-Appropriate Behavior in Middle-School Students
Dyanne Tracy, Oakland University

Friday, October 18, 3:30-4:20
3.7.2 *Parent Involvement and School/Teacher Improvement*
Parlor F
Division K Paper Session

Chair: **Mary Ann Wham**, Northern Illinois University

An Operational-Strategy for Improving Inner-City Schools
Shiela Kendrick, Robinson Junior High School

Strategies for Training Student Teachers in Parent Involvement Competencies
Lenore Peachin Wineberg, University of Wisconsin-Oshkosh

Restructuring Teacher Effectiveness Through Teacher/Student Research
Mark Krabbe, Miami University

Friday, October 18, 3:30-4:20
3.7.3 *Teacher Characteristics and Relationship to Standardized Testing*
Lincoln
Division K Paper Session

Chair: **Richard Reynolds**, Ohio State University

Teacher Characteristics
Ralph Darr, University of Akron

The NTE: Effects of Standardized Testing on Curriculum
Craig DeVille, Micheline Chalhoub, William Loadman, Ohio State University

Voices from the Field: Science and Social Studies Teachers Speak
Adria Karle-Weiss, Diana M. Hunn, University of Akron

Friday, October 18, 4:30-6:00
3.8.0 **INVITED ADDRESS**
Maximilian

Chair and Organizer: **Alice Corkill**, University of Western Ontario

Speaker: **Michael Pressley**, University of Maryland

Topic: *What it Takes to Get the Nation's Children to be Good Readers: Issues and Methods*

Friday, October 18, 9:00-????
3.9.0 *President's Reception: Beer, Wine and Cheese*
Regency

Hosted by: **Ayres D'Costa**
President MWERA
Ohio State University

All registrants are invited to attend.
Please, no smoking.

Saturday-At-A-Glance

Time	Division A	B	C	D	E	F	G	H	I	J	K
7:00-8:00	**Fun Run**										
7:30-9:00	**Midwest Hospitality**										
9:00-1:00	**Special Multicultural Education Sessions**										
9:00-10:50			✓						✓		
9:00-9:50				✓	✓						✓
10:00-10:50											✓
11:00-12:30	✓	✓									✓
11:00-11:50											✓
11:00-1:00								✓			✓✓
12:00-1:00							✓				
1:00-3:00	**Executive Committee Meeting**										

Saturday, October 19, 7:00 a.m.
FUN RUN -- 2 Miles
Chicago Yacht Club, Monroe Street and Lake Shore Drive

Run Director: **Ken Kiewra**, University of Nebraska

Saturday, October 19, 7:30-9:00
4.0.0 **Midwest Hospitality** *Coffee and Friends*
Maximilian

Sponsored by: Coral Cab Company

Saturday, October 19, 9:00-10:50
4.1.0 *Role Delineation in the Health Professions: Methods, Outcomes, and Issues*
Parlor A
Division I Symposium

Chair: **Ayres D'Costa**, Ohio State University

An Overview of Role Delineation Methods and Issues
Ayres D'Costa, Ohio State University

Relationship of Functions Performed by Hospital Chief Information Officers and Organization, Job, and Person-Related Characteristics
Merida L. Johns, Ohio State University

Role Delineation of Entry-Level and Experienced Medical Record Practitioners
Carol E. Osborn, Ohio State University

Relationship of Burnout to Job-Related Stress, Hardiness and Selected Organizational Socio-Demographic Characteristics Among Medical Record Department Directors
Melanie S. Brodnik, Ohio State University

Discussant: **William Loadman**, Ohio State University

Saturday, October 19, 9:00-10:50
4.1.1 *Graphic Organizers*
Parlor C
Division C Symposium

Chair: **Jean W. Pierce**, Northern Illinois University

Towards the Development of a Model of Representation for Self-Regulated Learning
Nelson F. DuBois, SUNY-Oneonta

A Literature Review of Student-Generated Graphic Representation
Jean W. Pierce, Northern Illinois University

Using Graphic Organizers to Improve Notetaking Behavior in Community College Students
Robert J. Keller, Office of Research, Evaluation, and Policy Studies, Northern Illinois University

Graphic Organizers in Content-Area Reading Materials
Margaret Tinzman, NCREL

How the Structure of Graphic Organizers Affect Note-Taking
Nancy Risch, Kenneth A. Kiewra, University of Nebraska
Maribeth Christensen, Ricks College
Sung Il Kim, Utah State University
Stephen L. Benton, Kansas State University

Discussant: **Jean W. Pierce**, Northern Illinois University

•••• SPECIAL MULTICULTURAL SESSION ••••
Saturday, October 19, 9:00-9:50
4.2.0 *Are the Pilgrims your Fore-Fathers, and Other Problems of Multiculturalism*
Medill
Division E **INVITED ADDRESS**

Chair: **Jennifer Parkhurst**, University of Nebraska

Speaker:**Richard A. Shweder**, University of Chicago

Saturday, October 19, 9:00-9:50
4.2.1 *Computer Adaptive Tests*
Parlor D
Division D Paper Session

Chair: **Leslie Lukin**, University of Missouri-Columbia

Will Converting Paper-and-Pencil Tests to a CAT Format Produce the Same Placement Decisions?
James A. Jones, JoAnn Uslick, Thomas E. Dinero, Kent State University

Comparison of Item Targeting Strategies for Pass/Fail Computer Adaptive Tests
Betty A. Bergstrom, Mary E. Lunz, American Society of Clinical Pathologists

Discussant: **Steven L. Wise**, University of Nebraska

Saturday, October 19, 9:00-9:50
4.2.2 *Teachers' Development*
Parlor F
Division K Special Session

Independent Studies as a Means of Facilitating Preservice Teachers' Development
Shari Saunders, David Fisher, Aliza McCormick, University of Michigan, Ann Arbor

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•••• SPECIAL MULTICULTURAL SESSION ••••
Saturday, October 19, 10:00-10:50
4.3.0 *Research Dimensions of Multicultural Education*
Medill
INVITED ADDRESS

Speaker: **James Boyer**, Arizona State University

Saturday, October 19, 10:00-10:50
4.3.1 *Studies of Needs of Minority Students*
Parlor E
Division K Symposium

Chair: **Ayres D'Costa**, Ohio State University

Needs and Concerns of Asian-American Students in Relation to Academic and Socio-Economic Backgrounds
Linda Hulman, Ohio State University

The Relationship of Number of Years as US Immigrant to the Cultural and Academic Accommodation of Asian-American Students
Divya Soares, Ohio State University

A Study of Health/Wellness Benefits Accrued by Black Students as a Result of Membership in Two Different Church Denominations: Seventh Day Adventists and Baptists
Twinet Parmer, Tecora Rogers, Ohio State University

Saturday, October 19, 11:00-12:30
4.4.0 *Issues for the 21st Century*
Parlor A
Division A Paper Session

Chair: **William Evans**, Chicago Public Schools

Assessing Public Opinion on Collaborative School Improvement
Patricia A. O'Connell, Jeffrey B. Hecht, Noreen Michael, Patricia H. Klass, Illinois State University

Administrators' Perceptions of Selected Regular Education Initiative Issues
Ronald Small, David Suddick, Donald Goode, Governors State University

A Study of Time Allocated to Instructional Leadership Skill Areas by Superintendents of Indiana Schools
Mark Myers, Ball State University

The Relationship of District and School Characteristics with the Provision of First-Year-Teacher Staff Development Programs
Joan F. McGuire, Jackson Elementary School
Patricia H. Klass, Illinois State University
Garth Piercy, East Peoria High School

Discussant: **E. Jean Harper**, Wright State University

Saturday, October 19, 11:00-12:30
4.4.1 *Learning and Instruction in Elementary Science and Social Studies*
Parlor B
Division B Paper Session

Chair: **Mary Link**, Miami University

Fostering Global Citizenship Through the Elementary Social Studies Curriculum
Gloria Alter, Northern Illinois University

Teacher and Parent Attitudes Towards AIDS Education in the Elementary School
Stephanie Jones, Ruth Taylor, Lian-Hwang Chiu, Indiana University at Kokomo

The Effect of Instruction Delivery Systems on Content Knowledge and Learner Attitudes Toward Computer-Based Instruction
Beth A. Wiegmann, Thomas E. Thompson, Northern Illinois University

Hands-On Inquiry-Based Science Curriculum for a K-3 Teacher Enhancement Program
Cory Cummings, Northern Illinois University
Kristin Ciesemier, Fermilab Education Office

Discussant: **Susan M. Hegland,** Iowa State University

Saturday, October 19, 11:00-12:30
4.4.2 *The Identification of Master Teachers*
Lincoln
Division K Symposium

Char: **Richard P. Lipka,** Pittsburgh State University

In the Classrooms of Master Teachers: An Observational Study
Rozanne Sparks, Richard P. Lipka, Pittsburgh State University

Pros and Cons of High and Low Inference Observation Instruments
Charles Mote, Michelle Burris, Pittsburgh State University

Notes From the Field: Informal Learnings from an Observational Study
Selinda Staib, Lonnie Parker, Pittsburgh State University

Master Teacher Research: A Formal Reply
Jay Price, University of Wisconsin-Stevens Point

Discussant: **Jay Price,** University of Wisconsin-Stevens Point

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•••• SPECIAL MULTICULTURAL SESSION ••••
Saturday, October 19, 11:00-11:50
4.5.0 *Multicultural Education and Ethnic Concerns*
Medill
Division K Paper Session

Chair: **Deborah L. Bainer,** Ohio State University

An Analysis of Multicultural Factors in Ohio's Teacher Education Programs
Mary Ann Flowers, University of Toledo

Images of Ethnic Minorities: Perceptions of Graduate Students from a Predominantly White College
Rose Mary Scott, Joan Kennedy, Mankato State University

A Comparison of Knowledge Acquisition and Attitudinal Change Between an Integrated Model and a Subject-Specific Model in Multicultural Education
William G. Sparks III, Elizabeth Verner, Illinois State University

Discussant: **Thomas Midgette,** University of Arkansas

Saturday, October 19, 11:00-1:00
4.6.0 *Program Evaluation*
Parlor D
Division H Paper Session

Chair: **Cindy Boone,** University of Akron

Adult Literacy: Program Evaluation
Susan J. Daniels, Caryl A. Hess, University of Akron
Kathleen M. Meyer, Kent City Schools

Comprehensive Program Evaluation: Blending Qualitative and Quantitative Methods to Validate Program Implementation and Operation
Carol B. Furtwengler, Wichita State University
Carolyn May, Wichita Public Schools

A Comparative Study of Three Methods of Promoting Literacy in Young Children
Nancy Mawrogenes, Mavis Hageman, Trudy Wallace, Chicago Public Schools

Four Alternative Methods of Reporting Process Evaluations
Keith McNeil, New Mexico State University

Evaluation of a Process Model for Statewide Improvement of Administrative Practices
Theresa Strand, Educational Testing Service

Discussant: **Daniel Mueller,** Indiana University

Saturday, October 19, 11:00-1:00
4.6.1 *Studies in Efficacy, Beliefs and Attitudes*
Parlor F
Division K Paper Session

Chair: **Charlene M. Czerniak**, University of Toledo

Examination of the Relationships Between Perceived Potential, Commitment, and Efficacy and Performance, Satisfaction, Preparation, Career Orientation, and Academic Ability
Mari Kemis, Iowa State University

The Identification of Academic, Personal, and Affective Predicators of Student Teaching Performance
Ronald N. Marso, Fred L. Pigge, Bowling Green State University

A Study of Science Teaching Efficacy Using Qualitative and Quantitative Research Methods
Charlene Czerniak, University of Toledo

The Effect of Student Teaching on Attitudes Toward Effective Teaching
Gregory J. Marchant, Ball State University

Teacher Educators' Beliefs as to the Esteem in Which They are Held by Academics in Other Disciplines
Richard J. Reynolds, Ohio State University

Discussant: **Barbara Duffield**, University of Toledo

Saturday, October 19, 11:00-1:00
4.6.2 *Can NCATE Standards be Validated? If so How?*
Parlor E
Division K Discussion Panel

Chair: **Donald R. Cruickshank**, Ohio State University

Panel: **Ayres D'Costa, Donald Haefele, Thomas R. Knapp, William Loadman, John J. Kennedy**, Ohio State University

Discussant: **Donald R. Cruickshank**, Ohio State University

•••• SPECIAL MULTICULTURAL SESSION ••••
Saturday, October 19, 12:00-1:00
4.7.0 *Cross Cultural Values, Comparisons, and Stereotypes*
Medill
Division G Paper Session

Chair: **Sharon McNeely**, Northeastern Illinois University

Alerting American Teachers to Stereotypes of Arabs
Micheline Chalhoub, Ohio State University

Cross-Cultural Comparison of Self-Concept American vs. Indian and Swazi
Naim Gupta, Angela Simpson, Betty Gridley, Ball State University

Chinese-American Students' Values and Attitudes Towards Schoolwork and Learning
Jupian J. Leung, University of Wisconsin-Oshkosh

Saturday, October 19, 1:00-3:00
4.8.0 *Executive Committee Meeting*
Blackhawk

Abstracts and Papers

Abstracts of papers presented at the 1991 Annual Meeting are published separately and will be available to all Conference Participants (at no cost) at the Registration Desk at the Bismarck Hotel Lobby during Registration hours. Additional copies may be ordered from the Executive Officer, Charles Anderson, at a cost of $3.00 to cover prepaid postage and handling.

Papers presented at the 1991 Annual Meeting are eligible for inclusion in the ERIC System. A form with instructions is available at the Registration Desk. Participants are encouraged to use this opportunity to achieve greater exposure for their research.

In Memoriam

Nancy Palchik, University of Michigan, Ann Arbor
May 4, 1991

We will miss Nancy Palchik at our Annual Meeting this year. She died of Cancer. Nancy was an active member of MWERA for many years. Nancy joined MWERA in 1984, and served our organization as an Association Council member (1988-90), as the Hospitality Chair for the 1989 Conference, and as Division I Program Chair. More importantly, Nancy was an enthusiastic supporter of MWERA, its goals, and its programs.

Nancy held various posts at the University of Wisconsin over a 16 year period. Nancy was involved with the University Health Service, the School of Education, the Highway Safety Research Institute, and the Medical School. Most recently she served as Director of the Education Component of the Michigan Multipurpose Arthritis Center, and headed the Osteoporosis Prevention Project of Michigan, supported by the Michigan Department of Public Health. She was active in teaching clinical skills to medical students, and in developing methods of enhancing and assessing students' clinical reasoning skills.

Those wishing to contribute to the MWERA Scholarship Fund in her name should send their contributions to Charles Anderson, 1332 Southwind Drive, Northbrook, IL 60062.

1992 Annual Meeting

Next year's Annual Meeting will be held at the Bismarck Hotel in Chicago from Wednesday, October 14 through Saturday, October 17.

Program chairs are needed as are volunteers to help with other aspects of conference planning. Interested individuals are encouraged to contact the 1992 program chair.

Richard C. Pugh
School of Education
W. W. Wright Building
Indiana University
Bloomington, IN 47405

Suggestions, ideas and comments related to the 1992 program are also welcome.

Ya'l come back now!

Participant Index

Abascal-Hildebrand, Mary-Jo 3.6.1
Adams, Arlene 2.6.2
Al-Hiawani, Yassan 2.6.4
Alley, Reene 2.6.0
Alter, Gloria 4.4.1
Ames, Carole 3.5.0
Anderson, Charles C., Jr. 2.1.0, 2.5.5, 4.8.0
Andre, Thomas 2.5.2, 2.5.5
Andringa, Jane R. 3.1.2
Aubertin, Catherine 2.5.2
Bainer, Deborah 2.3.4, 3.1.1, 4.5.0
Bakken, Linda 2.5.3
Barcikowski, Robert S. 2.6.1
Barrons, Marcelline 3.1.3
Barshinger, Jack K. 3.6.1
Basford, Lewis 2.3.3
Bay, Luz G. 3.3.1, 3.7.0
Benton, Stephen L. 4.1.1
Benz, Carolyn R. 1.1.0
Bergin, David 3.6.1
Bergstrom, Betty A. 4.2.1
Berkowitz, Marvin W. 2.4.4
Blair, R. Clifford 2.6.1
Blixt, Sonya L. 2.5.5
Boone-Hawkins, Cynthia 2.4.3
Boone, Cindy 4.6.0
Borchardt, Betty 2.6.3
Boyd, Donald 3.6.3
Boyer, James 4.3.0
Brady, Peter 2.3.3
Brannan, Timothy 2.4.1
Britton, Paula 2.4.3
Brodnik, Melanie 4.1.0
Brookhart, Susan M. 2.5.1, 2.6.3, 3.3.2, 3.6.2
Brooks, Douglas 3.5.4
Brownlee, Christina 2.4.0
Bruning, Roger 2.8.0
Buchman, Deborah 2.6.1
Buckland, Michael 2.4.2
Buddy, Fred 2.4.2
Bugaj, Albert 2.5.1
Burris, Michelle 4.4.2
Cantrell, Diana 2.3.4
Carlson, Roger 2.3.3
Castle, Don Richard 2.4.2
Chalhoub, Micheline 3.7.3, 4.7.0
Chambers, Sharon K. 2.5.2
Chiang, Linda 2.4.0
Childs, Sally 2.6.0
Chiu, Lian-Hwang 4.4.1
Chlumsky, Eldon 3.1.4
Christensen, Maribeth 4.1.1
Christian-Smith, Linda 3.7.1
Chryst, Carolyn 3.6.1
Ciesemier, Kristing 4.4.1
Clark, Sanza 2.6.4
Cooley, Van 2.3.3
Cooper, Doris N. 2.4.3
Corkill, Alice 2.4.1, 2.5.5, 2.7.0
Crail, Jayn, H. 3.6.1
Cramer, Don 2.5.4
Cruickshank, Donald R. 2.5.5, 4.6.2
Cruz, José 2.3.4, 2.6.3
Cummings, Cory 4.4.1
Czerniak, Charlene 4.6.1
D'Costa, Ayres G. 2.1.0, 2.2.0, 2.5.5, 2.6.1, 3.9.0, 4.1.0, 4.3.1, 4.6.2, 4.8.0
Dallmar, Denise 2.5.4
Daniel, Susan J. 4.6.0
Darmer, Twinet 4.3.1
Darr, Alice 2.3.1
Darr, Ralph 3.1.2, 3.7.3
David, Ruth 3.5.1
Davison, Ronald 2.3.0
DeVille, Craig 3.6.2, 3.7.3
Dickens, Lori 3.1.0
Dieterich-Miller, Cynthia 2.6.2
Dillon, Ronna F. 2.4.1, 2.5.2
Dinero, Thomas E. 4.2.1
DuBois, Nelson 4.1.1
Dudley, Melissa 3.3.3
Duell, Orpha K. 2.5.5
Duffield, Barbara 3.6.3, 4.6.1
Dunnell, Patricia 2.5.3
Dupuy, Paula J. 2.4.3
Dye, Charles M. 2.4.2, 3.3.0
Elliot, Ronald S. 2.6.1
Elmore, Patricia 3.3.1
Eubanks, David 3.7.0
Evans, William 2.6.0, 4.4.0
Fager, Jennifer 2.3.2
Field-McGuire, Joan 4.4.0
Fisher, Dave 4.2.2
Flowers, Mary Ann 2.4.5, 2.5.5, 4.5.0

Fraas, John W.	2.5.5, 3.6.1	Johnson, Phedonia	2.6.0
Frank, Bernard M.	3.1.1	Johnston, Marilyn	2.5.4
Franklin, David L.	2.6.0	Jones, James A.	4.2.1
Fuller, Roberta	3.1.1	Jones, Stephanie	4.4.1
Furtwengler, Carol	4.6.0	Kadunc, Nancy J.	2.5.5
Gagney, William	2.3.1	Karle-Weiss, Adria	3.7.3
Galbraith, Bruce	3.1.3	Karr, Mary Beth	2.5.1
Giebelhaus, Carmen	2.6.3	Kavanagh, Jack	3.1.0
Gleissman, David	3.3.3, 2.3.4	Keller, Arthur	3.1.2
Godin, Ken W.	3.7.0	Keller, Robert	4.1.1
Godley, Mark D.	3.6.3	Kemis, Mari	4.6.1
Goode, Donald	4.4.0	Kendrick Sheila	2.6.3, 3.7.2
Gordon, Edward E.	2.3.1	Kennedy, Joan	4.5.0
Gordon, Nelson	2.6.2	Kennedy, John	1.0.1, 2.5.5, 4.6.2
Grady, Marilyn	3.6.0	Kiewra, Kenneth A.	1.1.1, 2.1.0, 2.2.0,
Granger, John	2.5.0		2.5.5, 4.1.1, 4.8.0
Green, Nancy S.	3.6.5	Kim, Sung-Il	4.1.1
Gridley, Betty	4.7.0	Kipka, Richard P.	2.6.3
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••• Notes •••

— NOTES —

ON THE COVER

The Bismarck Hotel. In 1894 the first Bismarck Hotel was established in a 40-foot building on Randolph Street in Chicago. Since then it has grown and expanded to provide excellence in accommodations, dining, and entertainment. With 550 rooms and banquet and meeting facilities, the Bismarck offers the Mid-Western Educational Research Association a quality affordable site for its annual meeting.

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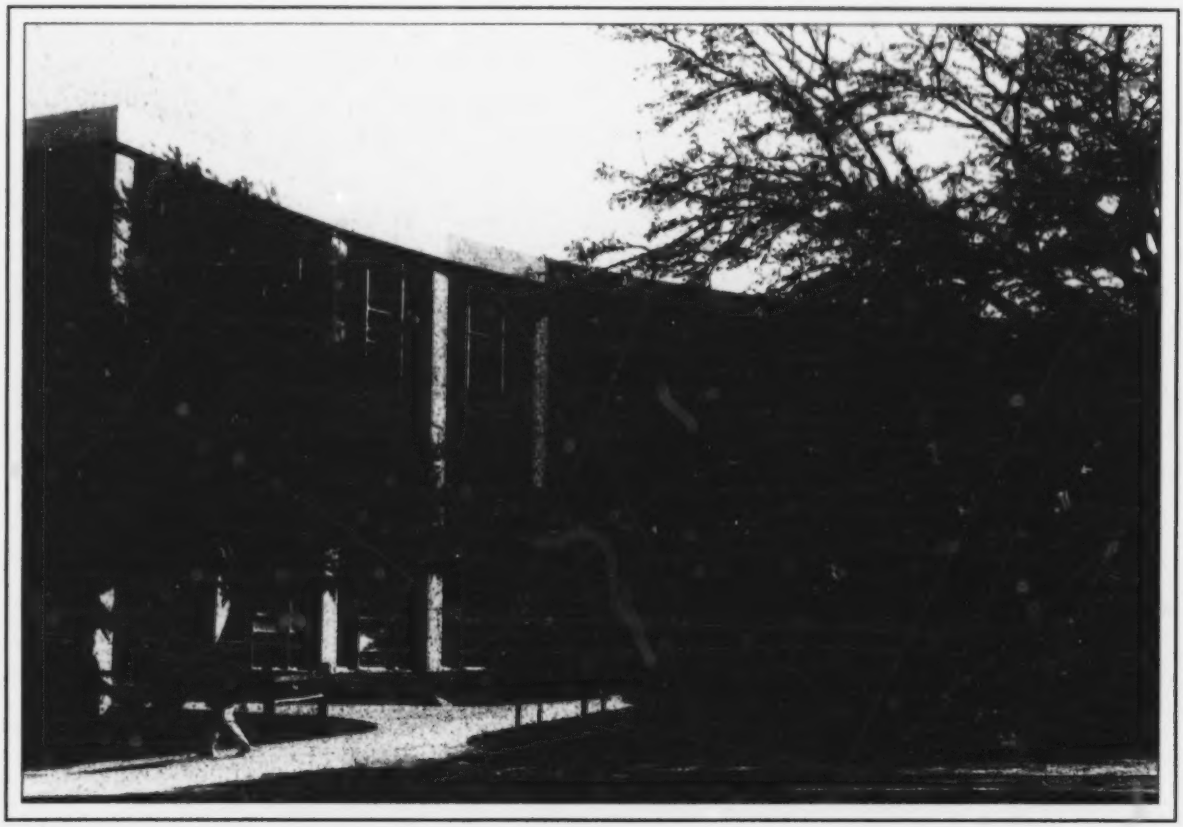

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As we begin our second year as editors of the *Mid-Western Educational Researcher*, we would like to take this opportunity to thank all of you who have contributed to the publication. We are seeing an increase in both the quantity and quality of manuscripts submitted for review. We hope that you will consider our publication as an outlet for your work.

We would like to thank our exiting editorial board members and welcome three new members. Laura L. B. Barnes replaces William Loadman; Immediate Past-President Ayres D'Costa replaces Dennis Leitner; and past President of MWERA and AERA and newly elected President of the American Psychological Association, Frank Farley, replaces the current MWERA President, Barbara Plake. We greatly appreciate the efforts of our editorial board and the ad hoc reviewers that spend a great amount of time and effort to evaluate the manuscripts. Their expertise provides guidance for manuscript revision as well as direction for the publication as a whole. At the annual meeting many of the members had comments for us concerning the journal. We are pleased to hear them and are especially happy to receive new ideas. We hope that you enjoy this issue and will let us know.

ON THE COVER

Northern Illinois University. On the cover is a photograph of Graham Hall at Northern Illinois University in DeKalb. Chartered in 1899 as a State Normal School, NIU now has seven academic colleges. The College of Education consists of four departments: Curriculum and Instruction; Educational Psychology, Counseling, and Special Education; Leadership and Educational Policy Studies; and Physical Education. Degrees in education are awarded at the baccalaureate, master's, specialist, and doctoral levels. All basic and advanced programs are fully NCATE accredited.

Correction: In the memoriam for Nancy Palchik, the Program Issue of the *Mid-Western Educational Researcher* incorrectly identified her institutional affiliation. She was with the University of Michigan for more than 16 years. The "Nancy S. Palchik Arthritis Educational Research Award" has been established in her memory. Contributions to support this award may be sent to the Arthritis Health Professions Association, c/o Ruth Martin, Executive Director, 1314 Spring Street NW, Atlanta, GA 30309.

Information for Contributors to the Mid-Western Educational Researcher

The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 5, Number 1 Winter 1992

FEATURE

On Research in Classrooms
By Joel R. Levin, University of Wisconsin, Madison
2

ARTICLES

Entering Teacher Candidates' Conceptions of Good Teaching
By Susan M. Brookhart, Duquesne University
7

Both Sides Now: Business and Education
An Investment in Knowledge: Business Involvement in Educational Reform
by Rebecca G. Gilliam, GenCorp, Fairlawn Ohio and Pearlmarie Whitford Goddard, The University of Akron
Public Education is Not Their Business by Dan Carpenter, Indianapolis Star
11

Highlights of the 13th Annual Meeting of the Mid-Western Educational Research Association
13

Transactional Instruction of Comprehension Strategies
By Michael Pressley, University of Maryland
14

Educational Research and AERJ: An Interview with Hilda Borko
By Thomas J. Lasley, University of Dayton
17

In Memoriam: Leonard Kise
19

Gender Differences in an Experimental Program on Arithmetic Problem Solving and Computation
By Gary W. Thompson, Valley City State University, and Deanna Strackbein and John Delane Williams, University of North Dakota
20

Educational Applications of the TFA Counseling System
By Ralph O. Mueller and Paula J. Dupuy, The University of Toledo
24

Voices in Education
28

MWERA Research Exchange
Inside Back Cover

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On Research in Classrooms

By Joel R. Levin
University of Wisconsin, Madison

Joel R. Levin

For the past two years as Editor of the *Journal of Psychology*, I have reviewed more than a dozen classroom-based instructional-intervention studies that contain the same "fatal" research-methodology/data-analysis flaw. Most recently, a genuinely concerned author of one such study sought my advice on potential preventive measures that could be taken to prevent that particular flaw from occurring again in the future. This presentation provides me with an occasion to discuss some of those "flaw-ointment" possibilities.

In the presentation, I do not attempt to quarrel with arguments in favor of replacing the usual laboratory treatment-comparison approach with instructional comparisons in actual school settings, based on legitimate concerns about ecological validity (e.g., Bracht & Glass, 1968), social validity (e.g., Wolf, 1978), political and national accountability, and the like. Neither do I contemplate the definitional question "What qualifies as *classroom* research?" other than to include any situation where an instructional treatment or intervention is administered within a classroom or classrooms. That is, in order to maintain a broad perspective, ignored here will be such issues as (*a*) the size, homogeneity, and composition ("as is" or randomly formed) of the classrooms; (*b*) whether the instructional intervention of interest is teacher- or researcher-administered; and (*c*) the duration and relevance of the intervention.

Six "Common Contentions" About Classroom-Intervention Research

Let me begin by presenting (and then arguing against) six "common contentions" (Boruch, 1975) about conducting empirical classroom-based intervention research. In particular, compared to laboratory-based treatment studies:

1. Classroom research is *more expensive* (i.e., it is more labor-, time-, and resource-intensive).
2. Classroom research is *more difficult* to conduct (in terms of scheduling and implementation constraints).
3. Classroom research addresses *important* teaching-and-learning issues (as opposed to trivial ones).
4. Classroom research investigates *real* student processes and performance (as opposed to contrived ones, or theoretical propositions).
5. Classroom research must, of necessity, be *less well controlled* (or, to quote Martin & Aykroyd, 1970s, the classroom is a "wild and crazy" place).
6. Classroom research legitimizes reliance on *qualitative evidence*, including testimonies, subjective evaluations, personal impressions, ethnographic data—see Wineburg (1991) for an effective combination of quantitative and qualitative data; Jaeger (1988) for a discussion of relevant methodological considerations; and Salomon (1991) for an alternative conceptualization of the problem, in terms of "analytic" and "systemic" research approaches.

My responses to these six contentions are, respectively: generally yes, probably yes, maybe, not always, definitely no, and nonsense! In a less-flippant vein, consider the contentions in terms of simplified (dichotomized) two-dimensional representations, with one dimension defined by *type of research* (classroom vs. laboratory) and the other defined by *quality of the research* ("good" vs. "poor," according to any of the just-stated six contentions). My contention is that in the literature, one can identify counter-stereotypical examples of each combination (e.g., methodologically sound classroom research and methodologically weak laboratory research; instructionally important laboratory research and instructionally trivial classroom research). So, so much for the contentions: They are specious at best.

The remainder of my presentation targets specifically Common Contentions 5 and 6 (methodology and data analysis)—for related discussion in the context of program-evaluation studies, see Levin and Levin (1991).

Classroom Research, Scientific Credibility, and the Publication Process

First, it will be useful to distinguish among three different kinds of empirical educational investigation. The distinction is not just a nominal one, but one that bears on the scientific "credibility" of the evidence resulting from the investigation. In particular, the distinction pertains equally forcefully to the objectives, procedures, and assumptions associated with the particular kind of investigation.

With *non-research classroom demonstrations*, one is justified in concluding, for example, that: "This is what happened to students' reading-achievement scores when they were instructed by Method A . . ." For non-research demonstrations, only descriptive statements of this kind are warranted, as there is no standard against which to measure the success of the intervention or the magnitude of the intervention effect. In cases where the instructional method is a more global instructional program, non-research evaluation studies constitute a special case.

Pre-experimental classroom-research studies are those that allow for hypothesis exploration or generation, as, for example: "After students in one classroom had been instructed by Method A and students in another classroom has been instructed by Method B, there was a between-classroom difference in average reading achievement. Perhaps this difference was attributable to method of instruction... [but perhaps it was not]." The distinguishing characteristic of such studies is that despite the inclusion of a standard or comparison, the comparison is not free of contaminants that could themselves account for the observed difference(s).

Experimental classroom-research studies, based on random-assignment procedures of the kind discussed later, permit scientifically sound hypothesis confirmation or validation. This is evident in the following statement and conclusion: "After several randomly assigned classes received two different methods of instruction (A and B), there was a between-method difference in the classes' average reading achievement. This difference was due to method of instruction..."

Further attention to scientifically credible classroom-research studies is given in five general methodological/statistical principles that I have found to characterize "good" experimental research (see also Levin, 1985):

1. *Sensible* (reasonable). There must be logical connections among the substantive research questions, research methodology, and data analysis.

2. *Selective* (planful). There should be a prior consideration of the nature and number of hypotheses tested. In that regard: (1) fewer is usually better than more; (2) predicted, rather than "postdicted" outcomes, comprise more credible scientific evidence; and (3) "discriminating" (Campbell and Fiske, 1959), "strong-inference" (Platt, 1964) hypotheses are to be tested whenever possible.

3. *Sound* (valid). Here I refer to methodological considerations, following Campbell and Stanley' (1966) notions of *internal* and *external* validity. I also refer to various technical assumptions required for valid statistical analysis of the data, as reflected by Cook and Campbell's (1979) *statistical-conclusion* validity. With respect to classroom-intervention research, in particular, many reasonable methodological and statistical approaches can be "borrowed" and adapted from other disciplines, including economics, medicine, and applied behavior analysis.

4. *Sensitive* (precise, powerful). A researcher should adopt methods of analysis that are optimally sensitive to, and powerful for, his/her stated research questions or hypotheses. Often this can be accomplished by testing one's hypothesis as planned contrasts (consistent with the second, *selective*, principle), rather than in the context of omnibus tests.

5. *Simple* (straightforward). All other things being equal, one should consider selecting statistical procedures that are easier (rather than "sophisticated" but also more complicated) to understand, employ, or explain (see, for example, Cohen, 1990; and Marascuilo & Levin, 1983).

Suggestions for Various Classroom (or Other "Aggregate") Intervention-Research Situations

One classroom. The usual one-classroom intervention study consists of assessing pretest-to-posttest changes on one or more designated dependent measures following an instructional intervention of some kind. Using Campbell and Stanley's (1966) notation, one can refer to this as a one-classroom OXO design, where the first O represents a pretest, X represents the intervention, and the second O represents a posttest. An alternative instance of a "pre-experimental" classroom-research study discussed earlier, this usual type of pretest-intervention-posttest design has a critical *methodological* problem associated with it, namely the confounding of the instructional intervention with any number of other extraneous factors (e.g., student maturation, learning/schooling effects that are unrelated to the intervention, teacher effects, novelty, contagion, and so forth). There is a critical *data-analysis* problem associated with this design as well (to be discussed in the context of the typical two-classroom study, which follows), when mean pretest-to-posttest changes are analyzed via a standard correlated-sample *t* test.

For this type of study to furnish credible statistical support for the presence or absence of an intervention effect, a few alternative approaches can be considered:

- *one-group interrupted time-series* (OOOOOOOXOOOOOO) *design*, assuming that a sufficiently large number of pre- and post-intervention measures are taken. Data-analysis possibilities include parametric time-series analysis (e.g., Glass, Willson, & Gottman, 1975) and Edgington's (1975) nonparametric analysis (see, for example, Kratochwill & Levin, in press).
- *ABAB...AB-type designs* (where, over time, A represents baseline or nonintervention phases, and B represents intervention phases), followed by nonparametric "permutation" or "randomization" tests (e.g., Levin, Marascuilo, & Hubert, 1978).
- *randomized experiment within the classroom*, to assess either the intervention as a whole (macro-experiment) or components of the intervention (micro-experiment). Refer to Lehrer's research on computer instruction in Logo for examples of the former (e.g., Lehrer, Guckenberg, & Lee, 1988; Lehrer, Randle, & Sancilio, 1989).

Two classrooms. Historically, one of the most commonly applied strategies in educational "experiments" has students in one classroom receiving an instructional intervention and those in another not (or the latter receive a placebo or some alternative intervention). Sadly, however, there are three potentially irreparable sources of difficulty associated with one-classroom-per-treatment designs of this kind (see also Levin, 1985).

(continued on page 4)

First, there is the *methodological* problem previously alluded to for pre-experimental classroom-research studies, namely the confounding of the instructional treatment with any number of other factors—including teacher characteristics, student characteristics if the classes are not randomly constituted, time-of-day effects, "lawnmower effects" (Page, 1965), and "compensatory rivalry"/"John Henry" effects (Saretsky, 1972) if the classrooms are situated in the same school. Such confounding is present even when the classroom to receive the intervention is randomly specified, when students are randomly assigned to the two classrooms, or when the same teacher is present in both classrooms.

The second source of difficulty is an *ethical* one—in particular, determining which classroom gets the "good" or "innovative" instructional treatment. Unless a "wait-list" control approach is employed (wherein students in the non-intervention classroom are scheduled to receive the instructional treatment after the formal study has been completed), then the withholding of potentially beneficial instruction from some (but not all) students becomes an ethical issue to which the researcher must attend.

Finally, there is a crucial *statistical-analysis* problem—one that is often ignored by otherwise careful researchers—even though it has been recognized in our field as a data-analysis thorn for at least 50 years (Lindquist, 1940). Because the singly-administered intervention can potentially affect all students within the classroom in interrelated ways, this design produces nonindependent "units of analysis," which renders invalid an independent-sample *t* test of the effect of the intervention—along with its associated confounded teacher, student, and classroom-contextual effects.

What can be done when one-classroom-per-treatment constraints necessitate this type of design? What follows are a few recommendations:

- *replicated one-group or two-group time-series designs* and analyses, which would address, respectively: (*a*) the generalizability of the intervention effect across classrooms; and (*b*) the difference between the intervention and nonintervention effect across classrooms; and (*b*) the difference between the intervention and a nonintervention (or an alternative intervention) series.
- *replicated ABAB . . AB-type designs* and nonparametric analyses (Busk & Marascuilo, in press).
- *randomized experiments within the classrooms*, as mentioned earlier.
- *alternative-treatment or two-group comparisons* based on two or more predictably different and distinct, or "transfer-appropriate processing" (Morris, Bransford, & Franks, 1977) outcome measures—(see, for example, Jones & Hall, 1982); or in the context of *two-period crossover designs* (e.g., Cotton, 1989), which are sensitive to both the methodological and ethical concerns expressed earlier.

Four classrooms. With four classrooms (or subgroups within classrooms) and the capability of staggering the introduction of an intervention from one randomly designated classroom (or subgroup) to the next, a researcher can produce scientifically credible results through the application of a *multiple-baseline design* implemented across classrooms (e.g., Kratochwill, 1978). When at least four classrooms (or subgroups) are available, it is possible to document a statistically significant ($p < .05$) intervention effect on the basis of an efficient nonparametric permutation test (Wampold & Worsham, 1986).

Six or more classrooms. The remainder of my presentation will focus on instructional-intervention experiments in which six or more classrooms can be randomly assigned to intervention and control (or alternative intervention) conditions. With at least three classrooms per instructional condition and using classrooms as the units of analysis—or equivalently, a "hierarchical design" with classrooms "nested" within conditions (Kirk, 1982; Raudenbush & Bryk, 1988)—one can show that: (*a*) a nonparametric permutation test is able to document statistically significant ($p < .05$) intervention effects; and (*b*) corresponding parametric analyses will yield adequate power to detect effects that are "worth writing home about" (Barcikowski, 1981).

What follows are a variety of reported research examples and proposed logical extensions of the "classrooms as units of analysis" philosophy. These are divided into three general categories: (1) one-factor designs that focus on the effect of the intervention per se; (2) designs with more than one experimental factor, where both main effects and interactions are of interest; and (3) designs where one's primary interest is in the interaction between the experimental factor and selected student characteristics. Each of these situations is considered in turn.

1. To analyze the effect of an intervention per se, one can conduct:

- *between-classroom comparisons on a single outcome measure*, as illustrated in Figure 1 and by several studies in which either large- or small-group means comprised the units of analysis for assessing the effects of competing vocabulary-learning,

Figure 1

Intervention Effects: Basic Design and Analysis (Y=Performance on the Dependent Measure)

	Treatment			
	T_1	T_2	. . .	T_K
Class 1(T_k)	$\bar{Y}_{11}$	$\bar{Y}_{21}$	. . .	$\bar{Y}_{K1}$
Class 2(T_k)	$\bar{Y}_{12}$	$\bar{Y}_{22}$	. . .	$\bar{Y}_{K2}$
Class N(T_k)	$\bar{Y}_{1N_1}$	$\bar{Y}_{2N_2}$	. . .	$\bar{Y}_{KN_K}$
Means of Means	$\bar{Y}_1$	$\bar{Y}_2$	. . .	$\bar{Y}_K$

word-identification, and reading-comprehension strategies (e.g., Byrne & Fielding-Barnsley, 1991; Duffy, Roehler, et al., 1986, 1987; Levin, Levin, Glassman, & Nordwall, 1991; Levin, Pressley, McCormick, Miller, & Shriber, 1979; Stevens, Slavin, & Farnish, 1991).

• *between-classroom comparisons of gains or trends*, as may be seen in Foorman et al.'s (1991) use of trend analysis to compare two different word-identification instructional approaches throughout the course of a school year (see Figure 2).

Figure 2

Intervention Effects: Change Scores
(d=Time 2−Time 1, or d=Linear Trend, etc.)

	Treatment			
	T_1	T_2	...	T_K
Class 1(T_k)	$\bar{d}_{12}$	$\bar{d}_{22}$	...	$\bar{d}_{K2}$
Class 2(T_k)	$\bar{d}_{12}$	$\bar{d}_{22}$	...	$\bar{d}_{K2}$
Class N(T_k)	$\bar{d}_{1N_1}$	$\bar{d}_{2N_2}$	...	$\bar{d}_{KN_K}$
Means of Means	$\bar{d}_1$	$\bar{d}_2$	...	$\bar{d}_K$

• *between-classroom comparisons on a covariate-adjusted outcome measure*. In opting for this approach, one must be mindful of the way in which the covariate is taken into account. For example, Duffy et al. (1987) based their analysis on classroom-level adjusted means. However, an approach that is both more logical and statistically more powerful would be to take the covariate into account at the student level (based on the pooled within-treatment, within-classroom, slope) and then to perform the analysis on those student-level adjusted classroom means (see Figure 3). This as-yet untested classroom ANCOVA strategy goes hand in hand with the logic for investigating classroom-based interactions between interventions and student-level individual differences characteristics (see No. 3 on page 6).

• *between-classroom comparisons of variability*, wherein one compares classroom-average measures of variability (e.g., mean variances) to determine whether an instructional intervention affected student variability—in an analogous fashion to traditional tests of homogeneity of variance (Kirk, 1982).

• *within-classroom comparisons* of subgroups via counterbalanced repeated-measures designs (i.e., Latin square arrangements).

• *combined between- and within-classroom comparisons* via the previously mentioned crossover designs (as applied to classrooms).

Figure 3

Intervention Effects: Covariate-Adjusted Means
(Based on Pooled Within-Treatment, Within-Classroom Slope)

	Treatment			
	T_1	T_2	...	T_K
Class 1(T_k)	$\bar{Y}^*_{11}$	$\bar{Y}^*_{21}$	...	$\bar{Y}^*_{K1}$
Class 2(T_k)	$\bar{Y}^*_{12}$	$\bar{Y}^*_{22}$	...	$\bar{Y}^*_{K2}$
Class N(T_k)	$\bar{Y}^*_{1N_1}$	$\bar{Y}^*_{2N_2}$	...	$\bar{Y}^*_{KN_K}$
Means of Means	$\bar{Y}^*_1$	$\bar{Y}^*_2$	...	$\bar{Y}^*_K$

2. It is a straightforward matter to adapt the just-discussed approaches to the investigation of main effects and interactions involving two or more factors, as in:

• *combined between- and within-unit repeated-measures (split-plot) designs*. This approach is illustrated in Figure 4 and by a study by Copeland (1989) using a two-level between-teachers factor (teacher philosophy—inquiry vs. traditional crossed within a two level—within teacher). For each teacher, time-percentage scores

Figure 4

Interactions With Student Characteristics: Categorized

		Treatment			
		T_1	T_2	...	T_K
Class 1(T_k)	High				
	Low				
	High-Low	$\bar{d}_{11}$	$\bar{d}_{21}$	...	$\bar{d}_{K1}$
Class 2(T_k)	High				
	Low				
	High-Low	$\bar{d}_{12}$	$\bar{d}_{22}$	...	$\bar{d}_{K2}$
Class N(T_k)	High				
	Low				
	High-Low	$\bar{d}_{1N_1}$	$\bar{d}_{2N_2}$	...	$\bar{d}_{KN_K}$
Mean Difference		$\bar{d}_1$	$\bar{d}_2$	...	$\bar{d}_K$

(continued on page 6)

associated with a set of pre-specified behaviors were recorded. These data were then aggregated across days/sessions to form two scores for each teacher: one for the computer-mediated classes and the other for the teacher-mediated classes. With teachers as the units of analysis, this permitted for analyses of teaching-philosophy effect, type-of-instruction effects, and their interaction.

3. A common criticism directed at conducting analyses based on classroom means (rather than individual students' scores) is that this renders impossible the investigation of interactions involving the intervention and selected student differences. Such criticism is not well founded, however, as at least two different reasonable approaches can readily accommodate such interactions into the present framework. In particular, conditions-by-student-differences can be examined:

- with students categorized on some student-differences dimension (e.g., high vs. low levels of achievement). For example, with students classified as either "higher" or "lower" achievers, a mean high-low difference can be computed within each classroom. An analysis of between-conditions differences in the mean within-classroom difference of higher and lower achievers (as in Figure 4) provides an appropriate and direct test of the intervention-by-achievement-level interaction (see, for example, Levin et al., 1991). Alternatively, one could also avoid the units-of-analysis problem by investigating between-conditions differences separately for higher and lower achievers (with a statistical procedure that controls the familywise Type I error, if desired) in a manner analogous to either ANOVA "simple-effects" comparisons or MANOVA variable-by-variable comparisons (e.g., Marascuilo & Levin, 1983).
- in terms of a continuous student-differences variable, via between-conditions slope comparisons (Levin & Peterson, 1984; see Figure 5). This represents a sensible and sensitive approach to analyzing student-differences interactions at the classroom level. For example, suppose that six classes are randomly assigned to one method of instruction, and six to another. The interaction between methods and some student aptitude measure can be assessed by computing a slope (predicting students' performance from the aptitude variable) within each classroom, and then comparing the mean slope associated with the six Method 1 classrooms with the mean slope associated with the six Method 2 classrooms.

Figure 5

Interactions With Student Characteristics: Continuous (B=Within-Treatment, Within-Classroom Slope)

	Treatment		
	T_1	T_2	T_K
Class 1(T_k)	B_{11}	B_{21}	B_{K1}
Class 2(T_k)	B_{12}	B_{22}	B_{K2}
Class N(T_k)	B_{1N_1}	B_{2N_2}	B_{KN_K}
Mean Slope	$\bar{B}_1$	$\bar{B}_2$	$\bar{B}_K$

Summary and Conclusions

In summary, the "good news"is that it certainly is possible to conduct scientifically credible instructional-intervention research. The "bad news" is that it is not always simple or straightforward to do so. Being credible usually requires abandoning the "tried and true" traditional research methodologies and data-analysis strategies (as applied to independent treatment administrations and student outcomes), and opting instead for strategies that are compatible with the questions and assumptions associated with the "units" for which scientific generalizability is desired.

Also in contrast to the "usual," technically inappropriate, classroom-research approach, I advocate an alternative "best possible" classroom-research philosophy. According to this philosophy, a researcher should start by considering the "best possible" study (with respect to scientific credibility) and working down from there to the "next best possible" study given the existing constraints (such as resources, scheduling, degree of researcher control, and the like), to the "next best possible" study. In practice, creative solutions are often required. Fortunately for the classroom researcher, however, technically sound, creative solutions are becoming available.

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Entering Teacher Candidates' Conceptions of Good Teaching

By Susan M. Brookhart
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Abstract

Beliefs about teaching affect students' involvement in teacher preparation. To describe some of the conceptions of teaching with which entering teacher candidates begin their programs, 22 students enrolled in their first teacher education course were asked to describe their most memorable assignments and their favorite teachers from their school experiences. Results contradicted the traditional findings of teaching as telling and as an extended form of parenting. Student group and project work accounted for 59 percent of the assignments described. Academic and intellectual qualities were cited for 64 percent of the good teachers described. Warm and friendly, caring personal qualities were an important theme in the students' writings. But so were respect, skilled presentation of academic material, and careful guidance of pupils in academic tasks.

Teacher preparation is unique among college and university programs in the amount of familiarity with which students come to their programs of study. All entering teacher candidates have spent thousands of hours in "the apprenticeship of observation" (Lortie, 1975), and so all teacher candidates enter their programs with some ideas about what good teaching is and how good teachers behave. This apprenticeship only exposes students to their teachers' classroom performances, not the thinking behind the behavior (Clark, 1988). The apprenticeship of observation is not an analytical experience and is not deliberative; rather, it is "intuitive and imitative" (Lortie, 1975, p. 62). Further, since each student is exposed to and impressed by different teachers, the apprenticeship of observation does not contribute to the construction of a shared technical knowledge about teaching. Instead, it encourages a conservative imitation of common school practices (Lortie, 1975, p. 67).

There is no one "view of teaching" held by all teachers: different teachers hold different views of what teaching is (Zeichner, Tabachnik, & Densmore, 1987; Bunting, 1988; Kilgore, Ross, & Zbikowski, 1990). There does seem to be evidence, however, that commonly held views of teaching tend to be managerial and conservative (Lortie, 1975; Hoy & Rees, 1977; Lanier & Little, 1986; Brousseau, Book, & Byers, 1988). Pretraining influences contribute to teachers' conceptions of teaching (Lortie, 1975; Zeichner, Tabachnick, & Densmore, 1987). Beliefs about teaching affect students' involvement in teacher preparation (Lanier & Little, 1986). Students will filter the content of their teacher preparation coursework through their own definitions of what teaching is. Thus entering teacher candidates' beliefs will help shape the conceptions of teaching they take from their college training into student teaching and into initial practice. Practicing teachers use their beliefs about teaching to define classroom tasks and choose strategies for dealing with them (Nespor, 1987). Teachers' theories and beliefs, along with other thought processes, influence and are influenced by teachers' actions under the constraints and opportunities of a particular classroom context (Clark & Peterson, 1986).

Just as teacher beliefs are not homogeneous, neither are they static. Beliefs about teaching can develop and change throughout preservice and inservice work. Studies of the development of teacher beliefs describe modifications, often based on interactions with other teachers, to extant beliefs. Teacher beliefs about how student-centered and how directive instruction should be can change during the student teaching experience, and this change is partly related to the views of cooperating teachers (Bunting, 1988). If beginning teachers have supportive colleagues, they can grow and develop by reflecting on their work (Kilgore, Ross, & Zbikowski, 1990). Teacher beliefs continue to change with additional years of experience, although these changes are not all in a positive direction; more experienced teachers are more likely to believe their students are trustworthy and that schools should be agents for change, but they are also more likely to favor a common curriculum and to demonstrate a reduced sense of teaching efficacy (Brousseau, Book, & Byers, 1988).

Weinstein (1989) studied teacher education students' preconceptions of teaching. She found that preservice teachers were overly optimistic about their own abilities and held self-serving biases: they tended to rate as more important for teaching those attributes they felt they themselves possessed. In order to investigate reasons for this finding, she asked students to list characteristics of "a really good teacher." She found that students described good teaching in terms of warm, caring interpersonal relationships and deemphasized academic aspects of teaching. This finding essentially replicated the work of Book, Byers, and Freeman (1983). The preservice teachers in their study viewed teaching as "an extended form of parenting, about which there is little to learn other than through instincts and one's own experiences as a child in the network" (Book, Byers, & Freeman, 1983, p. 10).

(continued on page 8)

The present study was based on the assumption that what entering teacher candidates believe about good teachers and good teaching will influence their construction of their own tasks as students in teacher preparation programs. Students' conceptions about good teaching will influence their expectations for program content and outcomes. Introductory education textbooks often invite students to reflect on their past experiences with good teachers (see, for example, Parkay & Hardcastle, 1990). A second assumption for this study was that entering teacher candidates' conceptions of good teaching will be drawn in large part from their own experiences in school (Lortie, 1975; Lanier & Little, 1986).

This study was guided by two questions: (1) What do students consider characteristics of good teaching, as evidenced by their thoughts about memorable assignments from their own schooling? (2) What do students consider characteristics of a good teacher, as evidenced by their thoughts about their own favorite teachers?

Method

The sample consisted of 22 students (6 male, 17 female) enrolled in one section of Introduction to Education at Duquesne University, a private, urban institution. All were 19-year-old second semester freshmen, mostly from moderate-sized suburban high schools. The data were paragraphs students wrote on two separate occasions. For the first paragraph, students were asked to write about a memorable assignment from their own school days. Entering elementary (n = 12) and secondary (n = 10) teacher candidates were asked to write about an elementary or secondary assignment, respectively. The concept of an apprenticeship of observation guided this choice: if students were to take ideas from their own school days, they would most likely take into their own teaching repertoire ideas from the appropriate level of schooling. For the second paragraph, students were asked to write about their favorite teacher, again with the thought that students would be most likely to emulate teachers they liked or admired. The students were not asked to write in general about "What is a good teacher?" or "What is good teaching?" The writing tasks were concrete and personal so that students would give specific examples. The tasks were designed to tap the "observations" from which the "apprentices" would reason inductively to arrive at their conceptions of good teaching.

Handwritten paragraphs were collected and typed verbatim. Separate analyses were done for the memorable assignment and favorite teacher paragraphs. The typescripts were read independently by two teacher educators. Content categories were allowed to emerge from the data; a category was created if at least five students mentioned the same idea. After independent review, the two readers reviewed the data jointly to finalize (a) what content categories should be used and (b) which statements in each student paragraph constituted an instance of a particular category. All disagreements were resolved through discussion. After categories had been finalized and statements in the paragraphs had been coded accordingly, frequencies and percentages were calculated for each category. In addition, quotations exemplifying each category were identified. Chi-square tests of homogeneity by gender of student and by level (elementary or secondary) were done separately for each category. Yates' correction was applied to single-df tables. A liberal decision rule ($p < .15$) was chosen because of the exploratory nature of the analysis.

Results

Memorable Assignments Separate chi-square analyses of each of the categories from the memorable assignment paragraphs indicated no significant variations according to either level (elementary, secondary) or gender of student (see Table 1 for frequencies). More of the memorable assignments involved group work than individual work. The particular assignments described were classified, and more than a third of them involved plays or oral presentations. One student described studying learning disabilities in a high school Sociology class. Her most memorable assignment was participating in a skit in which she portrayed "a pregnant woman about to challenge the problems of raising" a handicapped child. Another student's most memorable assignment was a Political Science skit in which she portrayed one of five elementary school teachers, sole survivors of a nuclear disaster, talking about how to rebuild civilization. A third student's most memorable assignment was portraying Frederick Douglass in a

Table 1

Content Analysis of Paragraphs on Effective Assignments in School (12 Elementary, 10 Secondary assignments described)

Category	Frequency	Percent
Type		
Group project	13	59
Individual work	9	41
Assignment		
Play/Oral pres.	8	36
Written work	5	23
Construct/Build	4	18
Movies	2	9
Discipline	2	9
Reading	1	5
Assignment outcomes included elements in the affective domain		
Yes	13	59
No	9	41
Assignment outcomes included elements in the cognitive domain		
Yes	17	77
No	5	23

fourth grade Social Studies play. Another student described his fourth grade play in terms of strictly affective outcomes. He did not mention the topic of the play at all. "This was the first time I got up in front of so many people," he wrote.

Five students (2 elementary, 3 secondary) mentioned some kind of written report as their most memorable assignment. All five were long-term projects, for example, a written plan to start a successful business or a creative writing assignment based on a poem. Four students (3 elementary, 1 secondary) described constructing or making something as their most memorable assignment. The secondary student recalled a chemistry party to which students brought food in the shapes of atoms or molecules. She remembered bringing a cheese ball (nucleus) orbited by olives (electrons) held in place by toothpicks.

When students described what they had learned in their memorable assignments, 13 listed affective outcomes and 17 listed cognitive outcomes (8 described both). Affective outcomes included developing self-confidence, developing pride in one's work, overcoming fear, developing a personal interest in a subject, learning to work with others, and having fun learning. Cognitive outcomes were noted each time a student described the academic content or understanding he or she remembered from an assignment. These outcomes covered a wide range of topics, including spelling words, volcanoes, atoms and elements, starting a small business, the Civil War, Germany, the imagery of Stephen Crane, and Shakespeare's *Julius Caesar.*

Favorite Teachers Separate chi-square analyses of each of the categories from the favorite teacher paragraphs indicated three which differed according to the student's gender and two which differed according to the favorite teacher's (elementary or secondary) level (see Table 2).

The gender of the favorite teacher differed by gender of student. All of the male teacher candidates described men as their favorite teachers, except for one who changed the assignment so he could write about two favorite teachers, one man and one woman. One quarter of the female entering teacher candidates also described men as their favorite teachers.

Eight of the students wrote comments about their favorite teachers demonstrating energy, excitement, or enjoyment of their subject matter. For example, one student wrote, "because he seemed to enjoy so much what he taught I certainly enjoyed learning it." Another wrote, "He was so enthused about the importance of his subject, he tended to rub off on you." Mentioning this category varied by gender of student: males used this category more frequently than females to describe their favorite teachers.

Thirteen of the entering teacher candidates described their favorite teachers by writing about their friendliness. A response was coded in this category if it specified or implied a peer-like relationship as opposed to an adult to-child or authority-to-subordinate relationship. Mention of this category did not vary with gender of student or with level of teacher. Examples of responses coded into this category include the following. "He acted as our friend and spent time with us both in and out of the classroom. He would play sports with us, party with us... he would relate with us whether it was dealing with girls or grades." "We were all on the same level, not teacher and students but all teachers and students... she treated us as equals." "She made sure she got to know all of the students and spend a little time with each student on a personal level."

On the other hand, 10 of the entering teacher candidates described their favorite teachers as the object of respect and admiration or the source of influence, as an adult to a child. Four of these 10 students, all describing secondary teachers, used both this category and the friend category to describe their favorite teachers. Overall, students used this category more often to describe secondary than elementary teachers. One

(continued on page 10)

Table 2

Content Analysis of Paragraphs on Favorite Teachers in School (7 Elementary, 15 Secondary teachers described)

Category	Freq.	%	
Gender of teacher			
Female	12	60	All of the males and 25% of the females picked men
Male	8	40	(X^2=4.90, df=1, p < .05)
Teacher conveyed energy, excitement, or enjoyment of subject matter or teaching			
Mentioned	8	36	Males used this category more frequenly than females
Not mentioned	14	64	(X^2=3.16, df=1, p < .10)
Teacher was friendly, related on a student's own level			
Mentioned	13	59	
Not mentioned	9	41	
Teacher commanded respect, admiration, authority			
Mentioned	10	45	This category was used more often to describe secondary teachers than elementary.
Not mentioned	12	55	(X^2=2.39, df=1, p < .15)
Teacher presented material at appropriate speed or level			
Mentioned	8	36	
Not mentioned	14	64	
Teacher offered individual help, had the goal of understanding for every student			
Mentioned	8	36	This category was used more often to describe elementary teachers than secondary.
Not mentioned	14	64	(X^2=3.46, df=1, p < .10)
Teacher displayed positive affective qualities (other than friendliness or energy)			
Mentioned	13	59	Females used this category more frequently than males
Not mentioned	9	41	(X_c^2=2.27, df=1, p < .15)
Teacher displayed academic/intellectual qualities			
Mentioned	14	64	
Not mentioned	8	36	

student wrote, "She was a teacher we all respected a lot and admired." Another wrote, "We respected her and knew that she had a purpose to her assignments." One described his admiration, "I would be very lucky if I could emulate his style."

Eight of the entering teacher candidates described the particular teaching of presenting material at the appropriate speed or level for students to learn it as a quality for which they appreciated their favorite teachers. Mention of this category did not vary with gender of student or level of teacher. One student referred to "the ability to explain things on a level which the students can understand." Another wrote, "She went at our pace."

A seemingly related category did differ by level of teacher. Eight students mentioned their favorite teacher offering individual help or being concerned that each student understood the lesson. Students used this category to describe elementary teachers more often than secondary teachers. One wrote, "Mrs. S... would see that everyone understood it before moving on, even if she had to walk around and give individual help." Another wrote, "My teacher is walking around the room commenting on each student's drawing or painting." Students described their favorite teachers in terms of a variety of other positive affective qualities, beyond the friendliness and energy mentioned frequently enough to merit their own categories. Warmth, understanding, honesty, happiness, "a positive attitude towards life," caring about students, caring about their own families, and a sense of humor are examples of qualities coded into this category. Mention of positive affective qualities differed by gender of student. Females mentioned these qualities more frequently than males.

Fourteen students described their favorite teachers in terms of positive academic or intellectual qualities. This was the most frequent kind of description. Mention of a teacher's academic and intellectual qualities did not vary with gender of student or level of teacher. Some of these references were general: "there were a lot of activities that were always centered on the subject matter"; and "she would lecture very effectively, giving us hard topics to discuss." Others were specific: "telling the story of Cyclops"; "understand the confusing lawsuit of Dred Scott, a slave"; and "she could really discuss literature."

Discussion

Taken together, these results suggest that entering teacher candidates come to teacher preparation with varying conceptions of what good teaching is (Zeichner, Tabachnick, & Densmore, 1987). Each entering teacher candidate mentioned a slightly different mix of qualities when describing his or her most memorable assignment or favorite teacher.

These results also suggest that at least some entering teacher candidates do not hold the view that teaching is typified only by warm personal relationships (Book, Byers, & Freeman, 1983; Weinstein, 1989). Warm and friendly, caring personal qualities were an important theme in the students' writings, but so were respect, skilled presentation of academic material, and careful guidance of pupils in academic tasks. Good teachers seemed to be individuals who could provide personal support for students to do academic work. Memorable assignments were, for the most part, remembered for both academic content and personal experience.

These results also suggest that the very best assignments are not in line with a conservative concept of teaching. The assignments that stood out in memory as the best were all long-term projects; all required active student involvement in the learning tasks. They seemed to be remembered fondly for this reason. These entering teacher candidates did not identify routine or ordinary lessons as the best assignments (cf. Lortie, 1975; Lanier & Little, 1986). They remembered the unusual assignments, and they remembered them for their academic content as well as for being fun. If the entering teacher candidates tried to reason by induction from these memories to a concept of good teaching, they would arrive at a dynamic and active conception of teaching (cf. Scardamalia & Bereiter, 1989). It is worth noting that the students in this study were asked to describe their most memorable assignments. They may well have remembered many hours of routine seatwork. But they did not write about routine seatwork when asked to describe the best lessons.

The scope of this study was small. Its results do not generalize beyond the class in which it was conducted. Because of small sample size, chi-square results were used to identify points for discussion and not for generalization. But without generalizing the results to other entering teacher candidates, three conclusions can be supported. First, there did exist different conceptions of good teaching and good teachers, and these were not entirely independent of gender of student or level of teaching. Second, these teacher candidates recognized and remembered the academic and cognitive aspects of teaching in addition to the personal aspects. Third, the best lessons in the memories of these teacher candidates were not traditional, conservative assignments but active participation in group projects. Most of the students in this sample entered teacher preparation with conceptions of good teaching that would make them open to training in content and pedagogy stressing group activities, communication of subject matter content, and academic as well as emotional care of children. These students were ready for the best in teacher preparation.

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(continued on page 19)

Both Sides Now: Business and Education

As the schools, the public, and government search for ways to improve the education of America's children, a new ally has emerged. Businesses across the country are becoming more actively involved in education. Corporate business, which has been known to spend a good portion of their money on training, is looking to improve the quality of the workers of the future. To this end they are contributing time, energy, and funds to improve public education. Although help from almost any source is welcome, some see the price of accepting the help of the business community as being too high.

Rebecca G. Gilliam, from GenCorp, and Pearlmarie Whitford Goddard, Ed.D., from The University of Akron, believe that business and education can form a powerful partnership in shaping public education for the betterment of America's children. However, Dan Carpenter, a columnist for the *Indianapolis Star,* considers the relationship as dangerous, and believes that the motives of corporate America may not serve the best interest of the future citizens of this country.

An Investment in Knowledge: Business Involvement in Educational Reform

By Rebecca G. Gilliam, GenCorp, Fairlawn, Ohio,
and Pearlmarie Whitford Goddard,
The University of Akron, Akron, Ohio

Why should business personnel get involved with the business of education? After all, they are certainly not the experts in curriculum development, theories of learning, or methods of teaching. Why, then?

For two very basic reasons. First of all, today's students are tomorrow's employees and customers. Corporations currently spend an inordinate amount of their training budget on basic skills and literacy programs to elevate some workers' skills to the level required for new and modified jobs (Rennie, 1989). These training programs are necessary because of the increasing number of workers who were not taught "how to think" and "how to learn" in high school. Many corporate leaders believe that preventive dollars spent today in reforming the education system may save remedial dollars spent tomorrow on poorly educated workers (MacDowell, 1989). It has been reported that 11 percent of companies with 100 or more employees are providing remedial training in basic reading, writing, and math. One third of the companies with 10,000 or more employees remedially train in the same (Gordon, 1990).

Secondly, the decline in the output of the educational system has been well documented since the early 1980s when *A Nation at Risk* was first published. If a corporation had the same failure rate as many of our school systems, it would not stay in business very long. Publicly held corporations have internal and external reporting requirements so that their performance can be evaluated. Yet what set of checks and balances is at work when it comes to our schools? Do most of our school boards really have the authority to make radical change in the system. Are they accountable to the voters? If the general public is dissatisfied with the output of the schools, the normal response is to reject a levy. This sends a message but does not provide any meaningful reform. Muson (1991) reports that some business leaders are lobbying legislators and administrators to clear out the

(continued on page 12)

Public Education is Not Their Business

By Dan Carpenter, *Indianapolis Star*

Forget the Jeffersonian and Emersonian ideal of education as the lifelong process of developing a contemplative, independent, skeptical democratic citizen. Today's public discussion of the quality of American schooling revolves around a simpler proposition: How can the young citizen be fashioned into a tool for making some company more money?

The language used by big business and its political friends in their annexation of the education issue has been more euphemistic than that, but not much. Consider "Help Wanted," a series of articles published by the Indianapolis daily newspapers recently as part of "a national public information campaign to educate Americans about the dire consequences of declining economic competitiveness due to poor schools and unskilled workers."

One installment in the series was a mail-in ballot on which readers could express their opinions about the issues raised therein. If readers sought education-related questions, they had to wait until the second section of the ballot. The first section asked them to assign ratings to "problems that some people say threaten our standard of living." The first "problem" was "too much government regulation of business." The second "problem" was "too many Americans who aren't willing to work hard any more." Not until the fourth "problem" was the subject of schools-and-skills even raised, and that was a pause on the way to "size of the federal budget deficit," "unfair trading practices by other countries" and the indispensable "demands for higher wages by American labor unions."

Talk about bias in testing! Here is a summary of the contemporary corporate agenda, dressed as an appeal for better schools. And getting away with it. This identification of the desires of one powerful element of the body politic with the obligation of everyone's schools bears the imprimatur of a preponderance of elected officials and a born-again host of educators themselves.

"Help Wanted," sponsored by such organizations as the Business Roundtable and Business-Higher Education Forum, was

(continued on page 12)

An Investment in Knowledge (continued)

thicket of rules and restrictions so that teachers can be empowered to change and revitalize school programs.

For general information, Gordon (1990) states that since 1983, approximately 100,000 school-business partnerships have sprung up. That is, seven partnerships for each of the 15,000 school districts in the United States. These companies include American Electric Power, Ameritech, Amoco, Capital Holding, Caterpillar, Eastman Kodak, Ford Motors, GenCorp, Hewlett-Packard, Procter and Gamble, Rubbermaid, and Sears-Roebuck (Keehn, 1991).

So then, how can these business people help education by investing in knowledge? Business personnel can volunteer their workers and pledge financial support to a school or school district. Input as to what skills are necessary to be employable in today's market should be utilized in curriculum planning. Business people can also share their expertise with educators on planning, training, administering, learning technology, and evaluating performance and program (Cranotta, 1991; Herhily & Day, 1989). When businesses band together to form coalitions or foundations, their impact can be felt at the state level as well, where radical change to the roots of the system can be made.

GenCorp has yet additional reasons for its involvement. The role as a corporate citizen is taken very seriously. GenCorp's philosophy regarding community relations can best be expressed by Rip Tilden, Vice President, Communications.

> Like many companies in America, we are coming to realize more every day the powerful impact which we have in the communities where we operate our plants or maintain offices. GenCorp is a corporate citizen of more than 25 communities in the United States.
>
> It has become increasingly apparent to us in recent years that our actions within those communities have a significant impact. At the same time, the economic, physical, and social environment in which we operate has a powerful impact on our future success as a company. We affect the quality of life in those communities and that affects our success as a company.
>
> It is proper for us as a corporate citizen to give our time and money to meet the needs of the communities where we operate.... One of the powerful tools we have available to us in addressing community needs is the GenCorp Foundation...a vehicle to fund charitable and educational organizations supported by GenCorp and its employees.
>
> The GenCorp Foundation's highest priority is the support of education.
>
> Giving our time and money to meet the needs of our communities matters. It enables us to contribute to the health of our communities, which contributes to the health of our company.

Slightly more than 50 percent of the GenCorp Foundation's $1.5 million annual contributions are given to education.

(continued on page 23)

Public Education is Not Their Business (continued)

launched with a press release quoting Indiana University President Thomas Ehrlich as exhorting Americans "to meet the challenge of creating a skilled workforce in regaining the competitive edge."

So what's wrong with a patriotic pep talk from a leader in higher education? Everything. It is not his job—not the job of any professor, teacher or principal—to help any group of businesses under any particular flag to compete. It is the job of education to nurture thinkers who will choose their work.

Such thinkers would of necessity be skeptics. They would question several premises of the business-driven education debate:

—Whether the majority of Americans can benefit from increasing competitiveness of American companies, purchased as it is with such hard coinage as reduced wages, relaxes pollution controls and exportation of jobs;

—Whether growth is necessary to economic health;

—Whether capitalism is the only economic system appropriate for the United States;

—Whether the American standard of living, with its voracious appetite for oil, soil, water and other natural capital here and abroad, if not already high enough; and

—Whether we truly have poured money into our schools (or other social needs) and now must make the best of reduced resources.

The last two assumptions bear an especially close relation. I submit we have rich country, a society of material excess, whose problem is not insufficient GNP but inequitable distribution.

In an article in the September 1991 issue of Phi Delta Kappan examining the multiple needs of high-risk schoolchildren, Harold Hodgkinson wrote:

> Like the Reagan administration before it, the Bush administration has made a major point of saying that Americans overspend on education. 'Throwing money at problems will not make them go away' became the recurrent litany of these presidents and their advisers. However, the data they cite to show that Americans spend more than other industrialized nations for education include figures for *higher education*, on which we spend a prodigious amount. (The United States has 5 percent of the world's elementary and secondary students and 25 percent of the world's higher education students.) (p. 14)

On the other hand, if we compare the percent of its gross domestic product that America spends on K-12 education with similar expenditures in other nations, the results are spectacularly different. Even with the difficulties of establishing 'levels of effort' for different nations, it is clear that many nations invest a larger share of their wealth in their children's education than we do. "In addition, the discrepancies in per-pupil expenditures *within* the United States are unmatched by any nation with a centralized education system. In many states in the U.S., the amount spent on *some* children is three or four times the amount spent on children in the same state (Hodgkinson, 1991, p. 13)."

(continued on page 23)

Highlights of the 13th Annual Meeting of the Mid-Western Educational Research Association

The 13th annual meeting of the Mid-Western Educational Research Association met October 16–19 at the Bismarck Hotel in Chicago. The program, organized by MWERA Vice-President Ken Kiewra, featured a number of new activities along with the traditional conference events.

The conference officially began Wednesday evening. After the preconference training workshops, Joel Levin, University of Wisconsin-Madison and Editor of the *Journal of Educational Psychology*, presented "Tips for Publishing and Professional Writing." His paper on this topic will appear in the next issue of the *Mid-Western Educational Researcher*. On Thursday a special New Member Welcome Session introduced first-time members to the Association and the conference. Joel Levin presented the keynote address on Research in Classrooms (see article on page 2).

The first invited speaker of the conference was Annemarie Palinscar (left) from the University of Michigan. Her presentation was "Enhancing Scientific Reasoning Through Collaborative Problem Solving." She noted that a number of reports and experts have emphasized the need to improve the instruction of science and mathematics in our schools. She presented the following wish list for science instruction distilled from a number of sources:

- Establish a developmentally sequenced curriculum.
- Provide opportunity for cumulative reference which builds knowledge over the course of the curriculum.
- Focus on significant and important science content.
- Take a problem rather than a process or fact focused approach.
- Involve students in the generation as well as the solution of problems.
- Determine outcomes that are related to society as well as science.
- Use instruction that is anchored in the lives of the learners.
- Immerse children in the language and discourse of science.

Currently Dr. Palinscar is conducting research with sixth grade students concerning matter and molecules. Although the content of the science curriculum remains relatively unchanged, design and explanation problems are included. The instruction focuses on the argumentation and explanation of problems and possible solutions. Group problem solving, including social norms, is emphasized. The social norms include: we contribute and help others to contribute to the group work; we support ideas by giving reasons; we work to understand others' ideas through restatement and questioning; and we build on one another's ideas. Although no comparisons have been made based on standardized achievement tests, measures of conceptualizations have favored the experimental approach.

During Friday's luncheon the gavel was passed from Ayres D'Costa to new President Barbara Plake (far right). Richard Pugh assumed the role of Vice-President (seen below, near right, discussing next year's conference with President-Elect Ken Kiewra). Awards were given to the 34 charter MWERA members that are still active members. Certificates of appreciation were given to Donald Cruickshank, Ohio State University; Adria Karle-Weiss, Lake Erie College; Sharon McNeely, Northeastern Illinois University; and Isadore Newman, The University of Akron. An outstanding service plaque was given to MWERA Executive Officer Charles Anderson and to outgoing President Ayres D'Costa.

The luncheon address was presented by Carole Ames (pictured below) of the University of Illinois. Her topic was "Enhancing Student Motivation." She began by stating that motivation involves goals of behaviors. This is the "why" of student behavior. We want students to be focused on developing new skills, learning, the process of learning, and to want to participate in the process of learning. We want them to have a mastery goal orientation by putting forth effort in participating in learning. The classroom environment shapes learning. In many classrooms the focus is on the students' ability, not their effort. This leads to a valuing of success over effort or real learning, and a valuing of normative success over others.

(continued on page 14)

To create a mastery learning orientation the teacher should:

- use tasks that are diverse, novel, and have personal challenge,
- focus on the process, rather than the product of learning,
- set goals that are personally relevant and meaningful to the students,
- give the students real choices,
- give the students responsibility, but also provide them with strategies and guidance,
- avoid public recognition such as awards which disenfranchise some students by acknowledging others,
- make students feel like they belong in the classroom,
- avoid extrinsic incentive rewards which undermine the intrinsic value to tasks,
- not use ability grouping,
- use private evaluation which is based on progress and mastery, and
- understand that motivation permeates the curriculum.

She went on to suggest that changes need to be made at the school level. Principals need to be instructional leaders. However, we may not be able to change the schools without changing parents' understanding of learning and motivation. Parents need to be given information to facilitate interactions with their children concerning academics and the process of learning.

Michael Pressley holds "court" at the Presidential Reception.

Michael Pressley, University of Maryland, presented a speech on transactional instruction after participating in a "Meet the Editors" session (see accompanying article). Saturday started with a two-mile fun run around the Chicago lake shore. Special sessions on multicultural education were featured Saturday morning with invited addresses by Richard A. Shweder, University of Chicago, and James Boyer, Kansas State University. (The next issue of the *Mid-Western Educational Researcher* will feature a special section on multicultural education.

Transactional Instruction of Comprehension Strategies

By Michael Pressley, University of Maryland

There are many opinions about what strategies-based instruction is, should be, or could be. There are differing conceptions of what happens to students during strategies instruction and of the role of the teacher in that process.

At one extreme are those who view any cognitive process instruction as necessarily mechanistic and behavioral. They contend that such instruction provides the child with an explicit set of directions about how to perform a task. The child is portrayed as learning a set of responses, with those responses ideally matching the responses of any child receiving the instruction. The student is not considered an interpreter of the instruction, nor someone who is free to adapt the procedures according to their needs or styles or the demands of the situation. In this model, the teacher is equally constrained by the curriculum. The ideal curriculum is scripted and "teacher proof." In fact, instruction might best be computerized.

At the other extreme, students would receive little or no explicit instruction in cognitive strategies. In the best of all possible worlds, children would discover the cognitive strategies they need to function competently in school and in the world at large. Those subscribing to this position emphasize complex, naturalistic learning environments and tasks, albeit ones arranged so that children will be likely to discover how to complete assignments competently. This is done largely through presenting tasks that are in the student's "zone of proximal development" to use Vygotsky's term—that is, just a bit beyond what the student can now complete independently. Adult-child dialogues as children attempt such tasks constitute instruction in these contexts.

Children query about the tasks and adults respond as co-participants, providing gentle nudges in productive directions where discoveries are most likely to occur. Children gradually internalize these exploratory dialogues with adults until the dialogues become child-generated internal cognitions that can direct behavior. When that occurs, little if any adult prompting is required for task completion.

I have never accepted either of these extremes as representative of what strategy instruction is, should be, or could be (see forthcoming paper in *Educational Psychology Review*). My view is that even the most explicit of strategy instruction involves unique, individual constructions of knowledge and processes. Similarly, successful discovery learning environments necessarily include more explicit instruction than constructivist purists acknowledge. Moreover, effective strategies instruction can be based on an explicit curriculum provided by external authority. It is critical, however, that the curriculum provide sufficient freedom for the teacher to maneuver to exploit individual learner needs and styles in specific instructional contexts. The curriculum generally specifies its intended effects on learners, specific guidelines about what to teach to achieve those goals, and some general guidelines about how to teach. Within these guidelines, instruction varies considerably with a great deal of creativity, adaptation, interpretation, and construction of unique understandings by both teachers and students as instruction continues.

One purpose of my talk was to provide a concrete example of strategies-based instruction that is both explicit and constructivist in the sense I just suggested. A second purpose was to make clear that the nature of such instruction varies tremendously with the characteristics, needs, and responses of the children being taught. These purposes were accomplished by presenting information about a strategies-based instructional program, Students Achieving Independent Learning (SAIL), under development in the Montgomery County MD public schools. Both the explicit and constructivist elements of such a program were highlighted.

The designers of the SAIL program assume that competent reading is highly strategic. That is, while good readers always read for meaning, they read differently in different contexts, depending on their purposes for reading, the nature and difficulty of the text, their knowledge of the world to which the text refers, interest in the text being read, and their motivation to understand or remember the content being read. All these variables make competent reading a decision-making process. Good readers make decisions about reading rate and focus, basic processing strategies (e.g., word-for-word, skimming), and strategies for monitoring, problem-solving, and evaluation. Good readers anticipate what might happen in a text, evaluate their expectations as reading proceeds, generate questions about the text, visualize its content, seek clarification when confused, identifying main ideas, and selectively attend to important and interesting parts of the material. Good readers are generally active as they read, making associations between their prior knowledge and content encountered in text. Good readers evaluate the text (e.g., whether they like it, whether it is serving its intended purpose). Good readers possess extensive metacognition about the strategies they use, especially recognizing where and when those strategies can be applied profitably. Such metacognition is crucial to the regulation and appropriate use of the strategies learned in the curriculum.

SAIL involves explicit instruction in these processes that comprise capable reading. Thus, students are taught to predict, visualize, and summarize as they read. Generally active processing of text is stimulated by having students think-aloud during reading instruction, with associations to background knowledge encouraged as part of think-alouds. Such thinking aloud is expected to reduce impulsive responses and encourage planning prior to and during reading. This use of language to support cognitive actions is consistent with theoretical positions developed by Vygotsky as well as Meichenbaum.

Since SAIL students always receive reading instruction in texts at or about grade level, problem-solving strategies emphasize dealing with difficult words when reading for gist. For instance, when encountering a new word in text, it can be skipped, context clues can be used to infer its meaning, the reader can guess what the meaning might be, or the reader can reread for additional clues to meaning.

Teachers model and explain these comprehension strategies as part of regular reading group lessons, using outstanding children's literature from trade books, magazines, or basal reader anthologies. A lesson begins with the teacher reading first, thinking aloud about how the text ought to serve his or her purposes and how its content and structure relate to prior knowledge. The teacher may make predictions, report images stimulated by the text, or note consistencies and inconsistencies between text content, text structure, and reader expectations. Then the teacher invites students to try using the SAIL procedures with the text. Each member of the reading group takes a turn reading aloud. Throughout the process, student interpretations of text are encouraged. Reading group participants are thus exposed to a variety of interpretations of the text and processes for constructing and evaluating those interpretations.

My colleagues and I refer to the type of instruction observed in SAIL as *transactional strategies instruction*. It is transactional because what happens during reading group is co-determined by a teacher and student in interaction with a text and in particular, the interpretations of text are co-determined by teacher-student-text transactions, much as specified by reader response theorists such as Louise Rosenblatt. Years of transactions involving predictions, questioning, clarifications, visualizations, associations, and summaries are intended to produce independent, successful readers who engage in such processes on their own. My current research is aimed at determining whether that, in fact, is the case.

On Research in Classrooms *(continued from page 6)*

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Educational Research and AERJ:

An Interview with Hilda Borko

By Thomas J. Lasley
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Hilda Borko is a professor at the University of Colorado. Her current research interests are in teacher cognition and the interface between educational psychology and teacher education. She has recently completed work on an NSF grant on learning to teach mathematics. She is authoring chapters in the Handbook of Research in Mathematics Education and the Handbook of Educational Psychology.

L **What are some of the major impediments to the conduct of quality research in education?**

B The first thing that comes to mind is resources. By resources I mean not just money, but time and people. It takes a lot of time to do quality research. That is true whether you are conducting experimental work or qualitative, interpretive research. The specific nature of resources and how you allocate those resources may vary, but basically it takes resources to do research and some amount of financial support is often necessary. Since 1980, financial support has become less available to educational researchers. So it is more difficult to do large scale research now than it has been in the past.

L **Do you think the problem of limited resources is evidenced more in institutions that have historically had a strong research thrust than it was 15 to 20 years ago? Is the resource allocation problem going to hit the traditional research universities in a more dramatic way?**

B Yes, and one thing that is changing now is the availability of internal support. A lot of state universities are experiencing financial difficulties. For example, at the University of Maryland some of the internal resources that we were able to get in the form of graduate assistantships and small allocations of money to pay for materials and participants are drying up. The internal support is going to be increasingly problematic.

L **What issues would you like to focus on in terms of educational research and what kinds of manuscripts would you like to have in AERJ that are not in there now?**

B Five years ago there was a call for increased attention on subject matter specific to teaching and learning. I agree with that thrust. For example, in my own current work we have been studying the process of becoming a mathematics teacher. We are particularly interested in changes in novice teachers' knowledge of mathematics and of how teachers can best represent mathematical skills and concepts to their students. I think this is an area that's getting increasing attention, and I am seeing manuscripts that focus on subject matter specific teaching and learning. It's also an area that needs more work.

Another area that needs attention is educational diversity. It is clear that diversity in the population of learners is increasing. We need more research on how teaching is being adapted to accommodate these changes and how teaching can be adapted even more within the classroom context. A third area is critical thinking and problem solving—learning critical thinking and problem-solving skills and teaching through critical thinking and problem solving. For example, we still don't know very much about the processes of learning how to teach. We need to take an in-depth look at what novice teachers look like and how they differ from experts. We don't know or have a good sense of the process that teachers go through as they learn to teach. That's the important area that needs work.

(continued on page 18)

L **Why those areas? Why did you identify them?**

B Looking back historically and seeing what we've learned, research has taught us a lot about life in the classroom. I don't think that there is a burning need to know more about teacher behaviors, but we do need to know more about internal cognitive processes such as teacher and student problem solving, critical thinking and reflectivity. We just don't know as much about these "invisible" processes as we do about teachers' observable behaviors. I also see gaps in our understandings related to the diversity of learners and their needs in terms of teaching and learning. It is hard for educational research to keep up with all the significant needs that exist.

L **Do you want to say something about the methodological approaches that should be taken in approaching these issues?**

B We need more qualitative research, especially on teaching, learning, and learning how to teach. In the latest *Handbook of Research on Teaching* (1986), there is, for the first time, a chapter on qualitative research. That's an indication that the perspectives of the anthropologist and sociologist are becoming more visible in educational research. They offer orientations toward teaching and learning processes that an educational psychologist, like myself, does not possess, and I think we will get an even richer understanding if we can collaborate and work together on problems. The other methodological recommendation would be more collaborative research. I see a need for collaboration between the researchers of different disciplines and for collaboration between researchers and teachers. Again, to use my work as an example, our research team has an educational psychologist, an anthropologist, and mathematics educators. I know that our understanding of learning to teach is much richer because of the multiple perspectives we bring to the project.

L **Do you think universities are willing to support collaboration between persons in the different disciplines? I like that idea but it seems that a lot of universities find it difficult to reward collaboration.**

B From my perspective, the major difficulty with collaboration is the fact that people are really coming from different places using different languages to focus on related issues. You have to work really hard together in order to do good collaborative research.

L **Share your thoughts about the quality of the research you are receiving for AERJ. Do you think that the quality of the research manuscripts you are receiving is improving?**

B I want to answer "yes," but I'm not really sure. Part of the reason is that I am surrounded with manuscripts. It's hard to judge overall quality because I read so many. I can't step back and say the manuscripts now, as a group, are qualitatively better than the manuscripts we received in the past.

L **Many people feel that the training doctoral students have received recently (during the 1980s) has been superior to that provided back in the 1950s and 1960s. Do you agree?**

B We have made so many methodological advances and that is certainly reflected in AERJ. However, I think it's an oversimplification to say, for example, that quantitative research which uses current state-of-the-art kinds of analysis is necessarily an improvement. Look at some of the exemplary process-product studies of the 1970s. For what we knew at the time they were outstanding pieces of research. I don't even know if it's fair to compare them using the same criteria. Certainly, though, the methodological advances are obvious.

One thing that I have noticed is that the quality of manuscripts varies tremendously. I have received a lot of outstanding manuscripts, even more than I can accept. And I've received manuscripts on the other end of the spectrum. I also see an incredible amount of variability in research paradigms as well as quality. One of my priorities is to enhance the variety of the available research. We are seeing more good research with a wider variety of perspectives. I'm seeing good, interpretative research, more action research, more research that draws upon concepts from disciplines other than psychology. From my perspective as an editor, the key is not just that research is better now; the greater variety is also important.

L **One last question. Do you see that there is too much of an emphasis on research and scholarship? Do you think that teaching is de-valued or de-emphasized?**

B That's a tough question. I think that the answer is "yes," in a sense. In some institutions research is valued and rewarded to a greater extent than teaching. But I think the answer is "no" in the sense that expectations for the amount of teaching, the amount of service, and the amount of research are typically the same for all faculty. Unless, of course, there is external funding that pays for faculty time. I really support the notion of differentiated responsibilities. I believe that some faculty members are stronger in some areas than others, and given the nature of their expertise they have more opportunities in some areas. For example, when I first went to Virginia Tech, I was amazed at all of the service that some faculty members were providing. People in reading education and math education were constantly called for workshops or inservice. They had opportunities that I just didn't have as an educational

psychologist. One of the things that I don't see happening is the opportunity for the faculty members to put time and energy in areas where their skills are most evident and significant. Faculty members should be regarded for their accomplishments in the areas they choose to emphasize. Hence, for faculty members who are strong in service, there should be an expectation that they achieve as much as their colleagues, but to do it in service. And the faculty member who wants to focus on teaching should be rewarded for excellence in that area, but he or she should have different teaching loads than a faculty member who wants to focus on research. Teaching in the field and working as a supervisor or a teacher educator in the field takes an enormous amount of time. It's more than just teaching a course. If we want teacher education done right we have to recognize and reward the component of *teaching* just as we recognize and reward high quality *research*. One person does not have enough time to focus his or her energy on all the areas. I know that this idea is hard to operationalize so that it's done fairly, but I think it is something we should work on. One of the arguments against this sort of "role differentiation" is that it would create a class society where the researcher might be held in higher esteem than the teachers who are heavily involved in teaching, or professors who focus on service. That could be a possible outcome, but I don't think it needs to be.

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In Memoriam: Leonard Kise

Leonard Kise passed away at home on the morning of December 6, 1991, after a 3½-year battle with liver cancer. Len served MWERA as an elected Association Council representative and was a co-founder of the *Mid-Western Educational Researcher*, remaining as one of its co-editors for 9 years. He obtained his doctorate from Cornell University in Child Development, taught at the University of Connecticut, and joined the Northern Illinois University faculty in 1967 where he remained until his death. He is survived by his wife, 5 daughters and a son. Len will be remembered by his many friends and students as one who fulfilled each task with dedication, enjoyment, and thorough consideration.

Entering Teacher Candidates' Conceptions of Teaching (continued from page 10)

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Gender Differences in an Experimental Program on Arithmetic Problem Solving and Computation

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Abstract

An experimental program, eight weeks in length, on mental arithmetic computation was conducted with fourth grade students (males, N=30; females, N=21) and compared to a group of control students (males, N=18; females, N=26). Pre- and post-tests were conducted on both arithmetic problem solving and arithmetic computation. For both types of tests the experimental groups performed significantly higher. Females appeared to benefit more from the instructional program than males, suggesting that age-appropriate strategies could be beneficial in removing stereotypes in lessened female mathematics achievement.

Introduction

Mental computation skills are considered by professional groups and curricula reviewers as important aspects for citizenship today (National Science Board Commission on pre-College Education in Mathematics, Science and Technology [NSBC], 1983; National Council of Supervisors of Mathematics, 1988; National Council of Teachers of Mathematics [NCTM], 1989; Reynolds, 1989; Kutz, 1991). The new curriculum and evaluation standards of NCTM (1989) state that increased attention should be placed on mental computation in K-4 mathematics. The current emphasis in schools on this topic, however, is very limited and few materials or research efforts exist to guide teachers in helping students develop this skill. The importance of mental computation notwithstanding, because of the heavy emphasis on written algorithms, the attention to instruction in mental computation has been neglected (Hazekamp, 1986; Kutz, 1991; Reys & Reys, 1986). Mental computation is seldom encouraged or suggested in many basal text series and standardized tests do not include assessment of mental computation ability (Flournoy, 1967; Maier, 1977; NCTM, 1989; Reys & Reys, 1986).

Like many other aspects of school mathematics (e.g., set theory), the use of mental computation has a history of prior usage; mental computation was an integral part of mathematics instruction as early as the middle of the 19th century and was woven into the presentations for upper elementary grades in a 1896 textbook (Walsh, 1896). However, the use of mental arithmetic had few advocates in the early 20th century (exceptions were Suzzallo, 1911 and Smith, 1913) and a complete reliance on written algorithms became the norm (Flournoy, 1957; Reys, 1986; Reys & Reys, 1986). While there has been an ebb and flow in regard to emphasizing mental computation, as indicated earlier, the NSBC and NCTM have recently recommended their stronger emphasis; indeed, many of the newer basal texts such as the Harcourt Brace Jovanovich series (Abbot & Wells, 1987) have recently begun incorporating various illustrations of mental computations.

Gender Differences

Generally speaking, gender differences in mathematics achievement occur (when found) after fourth grade (Fennema, 1974; Hall & Hoff, 1988). Lloyd (1983) found gender differences favoring males in grades 3 through 6, though low-ability females generally outperformed low-ability males. Esquivel and Brenes (1988) showed that Costa Rican male students scored significantly higher than females for all grades tested above fourth grade (6th, 7th, 10th and 11th grades).

Strategies have been used to reduce or eliminate gender differences. Berliner and Casanova (1987) showed that competitive activities enhanced male learning of mathematics in grades four and five, whereas cooperative activities enhanced female mathematics learning. Saltzen (1981) showed that females scored higher than males ($p < .01$) in a program with continuous student progress including individualized or modified group settings, wherein the pace was set by criterion referenced tests and a sequentially coordinated math curriculum. Females in traditional settings scored lower than all other groups. Males showed little difference regarding outcomes and instructional strategies.

Method

Two classrooms of fourth grade students were selected to be involved with learning mental computation as an emphasized part of their mathematics instruction. Prior to the beginning of instruction, a set of materials were constructed to guide classroom

teachers as they prepared mental computation lessons. Then sessions were conducted with the teachers involved, explaining the rationale for mental computation, together with giving them access to the materials and help with using the materials for instruction. Two classrooms of students who would not have specific instruction and emphasis were chosen as controls. All four classrooms were from a small upper midwest city (population approximately 7,200). There were no socioeconomic differences between the experimental and control groups; most students' parents were working class or middle class; ethnically, the students were generally of Scandanavian or German origin.

A test was prepared that had two main components; a 13-item test of arithmetic problem solving and a 40-item test of arithmetic computation. An example of the arithmetic problem solving is:

"There are 700 letters and 315 postcards to be delivered. How many more letters than postcards must be delivered?"

An example of the arithmetic computation test is:

$$\begin{array}{r} 604. \\ -\ 298 \end{array}$$

Reliability was established for both tests through the use of the KR-20 (Kuder & Richardson, 1937), a measure of homogeneity. The KR-20 was calculated for both the arithmetic problem solving and arithmetic computation; they were, respectively, .78 and .85. The pretests were administered in the beginning of the school year. The students were given 25 minutes to complete the arithmetic computation test and 10 minutes to complete the arithmetic problem solving test. The experimental group was then given 5–10 minutes of systematic instruction and practice on mental computation each day for eight weeks. The control group received their usual instruction. The posttests were then given.

Results

Tables 1 and 2 report the results of the analysis of covariance (ANCOVA) for the arithmetic problem solving.

Table 1

Analysis of Covariance for Posttest Problem Solving Results (N = 95)

Source of Variation	df	SS	MS	F
Pretest	1	162.96		
Groups	3	129.26		
Gender	1	1.66	1.66	.50
Method	1	103.76	103.76	31.07*
Gender × Method	1	27.00	27.00	8.08*
Within	90	300.94	3.34	
Total	94	593.14		

*p < .01 *p < .001

Table 2

Display of Means and Standard Deviations for Problem Solving Tests (N = 95)

	Female Experimental (N = 23)		Male Experimental (N = 30)		Female Control (N = 26)		Male Control (N = 18)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pretest	7.00	2.61	6.90	3.69	7.69	3.17	9.16	2.94
Posttest	12.14	1.46	10.67	2.62	9.42	2.45	10.27	2.59
Adjusted Posttest	12.41	1.54	10.98	2.01	9.36	1.62	9.53	2.05

Both method differences ($p < .001$) and gender x method interaction ($p < .01$) are significant. Using Tukey's test, the female experimental group exceeds the female control group ($t = 5.66$, $p < .01$), the male control group ($t = 4.79$, $p < .01$) and the male experimental group ($t = 2.75$, $p < .05$) in regard to the adjusted posttest means. The male experimental group also exceeds the female control group ($t = 3.28$, $p < .01$). The significant interaction is due to the females in the experimental group performing significantly better than all other groups (including the male experimental group), while the females in the control group have the lowest adjusted posttest scores. The result for arithmetic computation are shown in Tables 3 and 4.

Table 3

Analysis of Covariance for Posttest Arithmetic Computation Results (N = 95)

Source of Variation	df	SS	MS	F
Pretest	1	1538.62		
Groups	3	522.59		
Gender	1	296.23	296.93	NS
Method	1	18.30	18.30	15.31*
Gender × Method	1	273.93	273.93	14.16*
Within	90	1741.42	19.35	
Total	94	3852.63		

*p < .01

Table 4

Display of Means and Standard Deviations for Computation Tests (N = 95)

	Female Experimental (N = 23)		Male Experimental (N = 30)		Female Control (N = 26)		Male Control (N = 18)	
	Mean	SD	Mean	SD	Mean	SD	Mean	SD
Pretest	23.33	5.50	24.13	6.92	20.38	8.78	22.27	6.98
Posttest	34.86	2.61	32.40	6.28	26.38	6.95	31.67	5.05
Adjusted Posttest	34.52	2.34	31.66	4.59	27.54	5.43	31.61	4.08

(continued on page 22)

Again, both a method difference ($p < .01$) and gender x method interaction ($p < .01$) are found in regard to arithmetic computation. While the order of the adjusted posttest scores is the same as was found for arithmetic problem solving, the magnitude of the differences among the means is dissimilar. For arithmetic computation, significance (using Tukey's Test) is in regard to the female control group which is significantly lower than both the female ($t = 3.42$, $p < .01$) and male ($t = 5.35$, $p < .01$) experimental groups and the male control group ($t = 3.00$, $p < .05$). In regard to the interaction, again, the females in the control group are the lowest scoring group and the female experimental group is the highest scoring group on the adjusted (and nonadjusted) posttest means.

Discussion

Two major outcomes are seen with this study. First, the use of systematic instruction in mental computation has positive effects on achievement and the use of this process should be more broadly encouraged. Second, and in one sense, the most important outcome is in regard to the gender x method interaction. The use of mental computation for fourth graders appears to be significantly more helpful to females than males. In that most research on mathematics achievement and gender tends to show higher male achievement, the present study has shown that females have benefited more than males from exercises in mental computation. Perhaps such age specific interventions with appropriate instructional strategies could be not only beneficial to all groups of students, but in particular, could help reduce the purported deficits in mathematics achievement associated with females. If those strategies that have positive effect on female mathematics achievement, such as mental computation, as shown here, or programs such as continuous progress, as described by Saltzen (1981) were to be instituted as a permanent part of mathematics instruction, rather than being allowed to fall into disuse, then mathematics achievement might be increased overall. More importantly, achievement of females could be greatly enhanced perhaps erasing, with time, the so-called gender gap in mathematics achievement.

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An Investment in Knowledge (continued)

Much harder to quantify are the hours spent by GenCorp volunteers in local education programs. One such program, GenCorp BEARS (Business Education Alliance to Reach Schools), is now in its third year and is a partnership between GenCorp, a middle school in Akron, and The University of Akron. One of the goals is to demonstrate to the students that the skills they are learning in school are needed in later life, whether or not they plan on going to college. Another goal is to encourage students to stay in school longer so that they can increase their skills base. Research done during both of the first two years of the program indicates that the goals have been met, at least in terms of student response.

The program creates a mock work site in the student cafeteria for two class periods, once a week for 18 weeks. Jobs are created based on skills which they possess at the sixth grade level. As in a real job, they go through job interviews, they get real paychecks which they can cash for BEAR BUCKS, they have a uniform which they must wear to work, and they have a year-end annual meeting and report. The President of GenCorp has attended this year-end meeting the past two years.

The long-term plans for the program are to export it to other GenCorp facilities as well as to other schools in the Akron area. Although it has just taken one hour and 20 minutes of class time, the program has meant many, many hours of planning on the part of all programs and their partners.

It's not often that one individual in a large corporation can feel that he/she is personally having an impact for good in the community. Granted, as part of a team, everyone's role is important in the corporation's efforts, both internally and externally. But in this education program, each student, parent, educator, and business person involved is critically important to the program. The results of individual efforts are gauged with each student. Furthermore, there is a measured positive impact on the students as they report that they have more reasons for staying in school. Yes, business personnel should be involved in education. They can no longer afford to not invest in knowledge.

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Public Education is Not Their Business (continued)

The message: Comparatively speaking, a nation habitually and fashionably critical of its schools doesn't want to put its money where its mouth is. Where is the money? Perhaps more than ever before, it's at the top, where the corporate CEOs live. According to a Congressional Budget Office analysis (Center For Community Change, 1990), the wealthiest 1 percent of Americans saw their annual *after-tax* income rise from $174,500 to $303,900 between 1977 and 1988, an increase of 74 percent. The top 10 percent enjoyed a 27 percent jump. The poorest 10 percent suffered a *decrease* in average income of 9 percent. Is it any wonder homelessness rose in this period and urban education declined?

"The point is that there is a tremendous amount of wealth being made by the top 20 percent of Americans—wealth that results in large part from public investments in infrastructure, education, health care and welfare," the Center for Community Change, a national assistance organization for low-income community groups, said in a 1990 report. "But this growing wealth is not being adequately taxed, which means the burden falls increasingly on middle-income taxpayers, who understandably often lead the outcry against higher taxes."

As politicians pander to these voters, the constituency that's supposed to be both model for and beneficiary of better schools shirks the burden of materially supporting them. The Center for Community Change report cites a study placing the United States below 20 of 22 industrialized nations in total taxes as a percentage of output. Even granting that money isn't everything, one would think we could take the price of a few months' untaxed overseas profits or a few days of Operation Desert Storm and fully fund Head Start.

If corporate America truly sees an education system in need of rescue or resurrection, it can demonstrate its concern by offering to help bring our tax outlay to the level of, say, Japan's. Putting up its share of the money, however, would not entitle the business community or any other societal interest to dictate and narrow the role of education. If our schools were incubators of inquiring minds, it is doubtful the nation would have tolerated the shortsighted social priorities of its government. If the current pedagogy of competitiveness continues its popularity, we can expect to hold first place in the developed world—in such categories as infant mortality and prison population—and to compete for last in investment in our people.

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Educational Applications of the TFA Counseling System

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Abstract

How an individual thinks, feels, and acts are all part of general human behavior. Depending on the specific context, a person might approach situations by emphasizing more the Thinking (T), the Feeling (F), or the Acting (A) component of behavior. The TFA system considers the situation specific interaction of thoughts, feelings, and actions; it provides a systematic way to assess T-F-A orientations and can be used to facilitate effective communication between individuals. Originally developed as a counseling model, educators in school settings might find the TFA system to have useful applications in their day-to-day struggle of balancing their roles as content deliverers, mentors, and classroom managers.

The purpose of this paper is to introduce the TFA (Thinking-Feeling-Acting) behavior model to educators in school settings. The model might be beneficial to those who want to explore an alternative approach to student behavior assessment and the analysis of student-teacher interactions with children mainly in grades 4 through 12. Hutchins' (1979, 1982, 1984) TFA system originally was developed as a counseling model to help clients achieve therapy goals. The major tenet of the model is the *systematic* integration of the cognitive (Thinking), affective (Feeling), and behavioral (Acting) components of human functioning. Depending on the particular problem situation, a client might emphasize primarily the Thinking, Feeling, or Acting dimension, and the counselor should select an appropriate intervention strategy based on prior knowledge of the client's orientation (Hutchins, 1984).

Hutchins' TFA model is just one of a variety of counseling approaches that defined behavior as consisting of several dimensions (e.g., Ellis, 1982; Glasser, 1984; Lazarus, 1981). Many of these approaches were modified and adapted to educational settings. For example, Glasser's (1984) concept of "total behavior" (Thinking, Feeling, Doing, and Physiologicing) is an integral part of Reality Therapy. Over the last two decades, this approach has been applied successfully to classroom settings as suggested in books such as *Schools Without Failure* (Glasser, 1969), *Control Theory in the Classroom* (Glasser, 1986), and most recently, *The Quality School: Managing Students Without Coercion* (Glasser, 1990). To our knowledge, however, the only counseling model that systematically considers the *interaction* of the cognitive, affective, and behavioral dimensions is Hutchins' TFA system. This paper was written with two main goals in mind: (a) to informally introduce educators to the major aspects of the TFA model and (b) to spark interest in further research on possible applications of the system to a variety of educational settings.

A Summary of the TFA Counseling System

In his first article on the TFA (Thinking-Feeling-Acting) system, Hutchins (1979) defined behavior "as including how a person thinks, feels, acts" (p. 529). He theorized that effective counseling involves addressing client concerns in all three behavior dimensions. Built on this Thinking-Feeling-Acting trichotomy, he proposed defining a client's behavior in a specific situation as having either a primarily Thinking-Feeling, Feeling-acting, or Acting-Thinking orientation. Hutchins (1979) concluded that counselors should take these differences in client behavior orientations into consideration when selecting intervention strategies.

In 1982, Hutchins extended the TFA model to classify a variety of specific counseling theories in terms of their relative emphasis on cognitive (Thinking), affective (Feeling), and behavioral (Acting) dimensions. For example, while Ellis' (1971) rational-emotive therapy can be classified as a mainly cognitive approach, Roger's (1961) client-centered theory uses a more affective orientation to counseling. Hutchins' (1982) classification system was developed to assist the counselor in selecting appropriate techniques to increase the probability of achieving counseling goals. The selection process should be based partly on the client's situation specific behavior orientation (Thinking-Feeling, Feeling-Acting, or Acting-Thinking), in order to achieve a maximum match between the client's behavior and the counselor's intervention strategy (Hutchins, 1984).

Since Hutchins' (1979, 1982, 1984) theoretical articles, the TFA system has been applied in several areas, e.g., counselor education (Hawkins, 1988; Hutchins & Cole, 1992), student personnel (Mueller & Hutchins, 1991), and group counseling (Clow, Hutchins, & Vogler, 1990). In the educational field, Vogler and Hutchins (1988) proposed the use of the TFA system in assisting parents helping their 10- through 14-year-old children complete homework and develop more effective study habits.

Specifically, they suggested a three-step sequence: (a) assessing the child's TFA orientation when completing homework assignments, (b) identifying the child's behavioral strengths based on this TFA assessment, and (c) building on these strengths, helping the child to utilize more latent behavioral dimensions to develop effective learning strategies.

Vogler and Hutchins (1988) used a triangular-shaped figure to graph and display a child's TFA behavior pattern for a given situation. Figure 1 shows a *TFA Triangle* (bold lines) with the dimensions Thinking (T), Feeling (F), and Acting (A) at its vertices. In general, the assessment of TFA orientations is broken down into four steps:

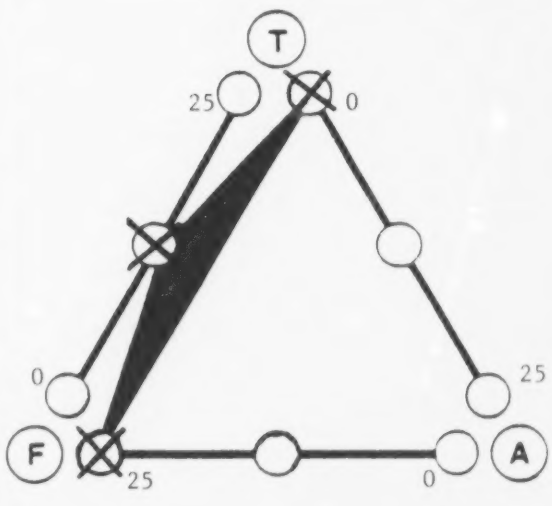
1. On the T-A axis of the TFA Triangle, an "x" is placed in one of three places depending on whether the individual's behavior is characterized by (a) an emphasis on the thinking component, (b) an emphasis on the Acting component, or (c) a balanced Thinking-Acting orientation.

2. On the A-F axis, an "x" is placed in one of three places on the continuum depending on whether the person's behavior is characterized by (a) mainly the Acting component, (b) mainly the Feeling component, or (c) equally emphasizing both Acting and Feeling.

3. On the F-T axis of the TFA Triangle, an "x" is placed in one of three places depending on whether behavior is characterized by (a) primarily the Feeling component, (b) primarily the Thinking component, or (c) a balance between the Feeling and Thinking dimensions of behavior.

Figure 1

The TFA Triangle and a Triad (shaded).



4. Finally, the three marks (x) that were placed on the TFA Triangle are connected to form the *TFA Triad* (Figure 1, shaded triangle), indicating the individual's behavior orientation.

For example, the Triad in Figure 1 could represent a child's TFA orientation when parents are confronted with math homework completion problems. Note the relative emphasis on the Feeling and Thinking components coupled with a relative absence of the Acting dimension. The child might feel anxious, overwhelmed, or just bored when confronted with a particular math assignment that is due the following day. The child may think about the problems and the deadline but seems to vacillate between the Thinking and Feeling realms without ever really getting started on the assignment. This relative absence (latency) of the Acting dimension of behavior needs to be addressed to help the child complete the assignment. Hutchins and Vogler (1988) suggested that one way to approach the development of the latent dimension is to build on the child's strength(s) (the dominant TFA component[s]). In the above example, parents could build on the child's Feeling dimension by listening empathically and validating the child's emotional experience. In addition, they could ask the child to verbalize their thoughts and analyses of the assignment, thus using the strength of the Thinking component within the child's current behavior. Finally, the introduction of the latent dimension (Acting) might be accomplished by structuring the assignment into smaller, more approachable sections, helping the child to actually begin the assignment.

In addition to the procedure suggested by Vogler and Hutchins (1988), the assessment of TFA orientations of adolescents and adults can be completed more formally by using the *Hutchins Behavior Inventory* (*HBI*) (Hutchins, in press). Initial validity and reliability evidence suggests that this instrument consistently measures individuals' Thinking-Feeling-Acting orientations (Mueller, Hutchins, & Vogler, 1990; Wheeler, 1986). Briefly, the development of the two main scales of the *HBI* followed four steps (also see the *HBI* manual, Hutchins & Mueller, in press). First, a list of carefully chosen words characterizing primarily thinking (T), feeling (F), or acting (A) persons was compiled (Walker, 1984). Second, each word in one category (T, F, or A) was paired with each word in the other two categories. This resulted in a total of 75 word-pairs, 25 pairs in each of three combinations: thinking-Feeling (T-F), Feeling-Acting (F-A), and Acting-Thinking (A-T). For example, the word-pair "rational-emotional" represents the T-F category, "sensitive-doing" the F-A category, and the pair "decisive-logical" represents the A-T category.

Third, three *bipolar* scales (*Tf*, *Fa*, and *At*) were developed to measure the degree of interaction of the behavior components, Thinking, Feeling, and Acting. Scores on the *Tf* scale signify how many T words were chosen in the T-F category of word-pairs; the *Fa* scale indicates how many F adjectives were chosen in the

(continued on page 26)

F-A category; and scores on the *At* scale indicate the number of A words chosen from word-pairs in the A-T category. Scores on the bipolar scales can be used to obtain a person's TFA Triad for a particular situation by labeling each TFA Triangle axes from 0 to 25 and plotting and connecting bipolar scores (see Figure 1). Fourth, respondents were asked to indicate how characteristic a chosen adjective is of their behavior in the a priori specified situation: somewhat, moderately, or very characteristic. This led to the definition of three *characteristic* scales (*Tc*, *Fc*, and *Ac*) that were designed to provide some information regarding behavior intensity in each of the three areas, Thinking, Feeling, and Acting.

Overall, the *HBI* was designed for healthy and normal individuals with a 10th-grade-reading level. The administration of the instrument should take no longer than 15 minutes, and the test can be both hand-scored or machine-read. The results from an *HBI* assessment can be interpreted by the teacher who is familiar with the TFA system or more formally analyzed by the publishing company.

Possible Applications to Education

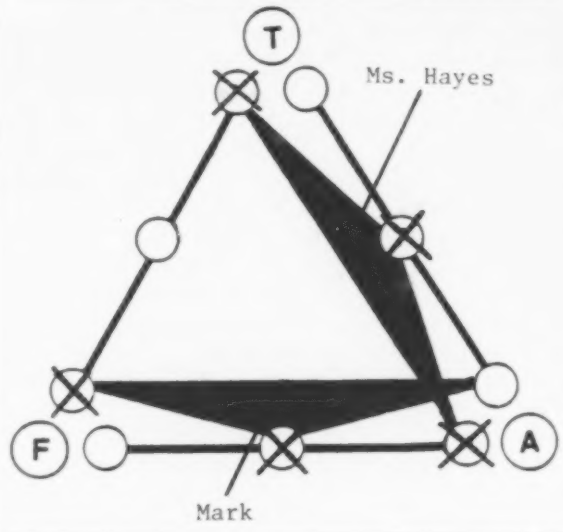
Even though the development of the TFA system is fairly recent, applications of the model are expanding in the area of counseling (e.g., student personnel: Mueller & Hutchins, 1991; spouse abuse: Clow, Hutchins, & Vogler, 1990). Currently, *Parents as Tutors* (Vogler & Hutchins, 1988) is the only publication that includes suggestions to apply the TFA system in an educational setting. However, the attempt to integrate modalities of behavior of different individuals in different situations is of concern to educators as well as counselors. In the following paragraphs, two possible classroom applications of the TFA system are suggested: student behavior assessment and student-teacher interactions. In addition, the TFA system could be utilized as a conceptual model and set of techniques for other educational programs.

Consider the case of 17-year-old Mark who exhibits school behaviors that are related to class disruptions, underachievement, and low self-esteem. In general, Mark could be described as being compassionate, sympathetic to others, assertive, and persuasive. However, in school, Mark is often sullen, resentful, impulsive, and bossy. He usually has trouble concentrating and often approaches assignments impulsively without thinking them through. Mark's behavior orientation could be assessed either formally with the *HBI* or informally by using the three-point TFA Triangle, as suggested by Vogler and Hutchins (1988). Mark's TFA Triad is shown in Figure 2. Note the relative absence of the Thinking component but the emphasis on the Feeling and Acting dimensions of Mark's behavior.

His teacher, Ms. Hayes, has tried unsuccessfully to help Mark overcome his difficulties in school. She teaches science and works hard at presenting material in interesting and stimulating ways. Ms. Hayes' approach to teaching is content oriented,

Figure 2

Mark's and Ms. Hayes' TFA behavior orientations.



methodical and organized, and highly structured. When students are experiencing problems with specific class material, Ms. Hayes is quick to offer advice, usually in the form of additional readings, experiments, or study techniques. Her TFA orientation with regard to her interaction with students is also shown in Figure 2. Note the emphasis on the Thinking and Acting components with a simultaneous absence of the Feeling dimension.

In this example, the Acting component of behavior is a primary dimension for both student and teacher (note the overlap of the two TFA Triads in Figure 2) while the Thinking and Feeling component is a secondary (latent) dimension for Mark and Ms. Hayes, respectively. In the science laboratory, Mark is able to follow Ms. Hayes' action-oriented directions and actually enjoys completing designated tasks. However, when Ms. Hayes teaches within a mainly cognitive and theoretical framework, Mark's inappropriate behavior tends to increase. She responds to his sullen and resentful attitude (Mark's primarily Feeling orientation) with several attempts to make the content more interesting (Ms. Hayes primarily Thinking orientation). For the most part, however, these attempts are unsuccessful. The communication between Mark and his teacher seems to break down since, in this situation, Mark is operating primarily from the Feeling component and Ms. Hayes is responding with a primarily Thinking orientation.

Writing about the counseling process, Hutchins (1984) suggested that the counselor should address the client's particular behavior orientation to avoid this type of communication breakdown. In the above example, Hutchins' recommendations would

translate into Ms. Hayes building on Mark's Feeling-Acting orientation (acknowledging feelings and praising appropriate actions) to develop strategies that increase the utilization of his more latent behavior dimension (Thinking). More generally, the TFA system might assist teachers when they encounter interaction/communication difficulties with individual students. The model appears to provide a convenient and useful way to assess the interaction of a person's behavior components (Thinking, Feeling, and Acting) and to help the teacher develop effective intervention strategies. Also, awareness of differences in TFA behavior orientations across several students and a variety of situations offers the teacher an additional way of conceptualizing individual differences within the classroom.

Finally, the TFA system could be used as a self-exploration technique, helping students to better understand themselves and their ways of behaving in different situations. More specifically, teachers involved with undertakings such as peer counseling, teacher advisory and/or drug education and prevention programs could introduce the TFA model as an easy to use system to identify primary and latent behavior components. Within these programs the use of the system might serve as another useful technique in the development of flexibility, decision making, and communication skills. However, extensive research is needed to evaluate the effectiveness and identify additional potential applications of the TFA system in the educational setting.

Summary

Although originally developed and researched in the counseling discipline (Hutchins, 1979, 1982, 1984), the TFA system appears to provide a useful model for educators in the classroom. Within this model, behavior is defined as the interaction of Thinking, Feeling, and Acting (Hutchins, 1979). These T-F-A orientations are situation specific and can be assessed either with the *Hutchins Behavior Inventory (HBI)* (Hutchins, in press) or with a more informal procedure first suggested by Vogler and Hutchins (1988). Within the counseling literature, development of the TFA and *HBI* approach to behavior assessment led to applications in areas such as school counseling (Hutchins, 1979), spouse abuse (Clow, Hutchins, & Vogler, 1990), and student personnel (Mueller & Hutchins, 1991).

In education, Vogler and Hutchins (1988) were the first to suggest that parents could use the TFA system to assist their children with homework. The current paper dealt with the application of the model in school settings. More specifically, the assessment of students' TFA orientations could be used to help conceptualize behavior as well as teacher-student communication problems and to select appropriate intervention strategies. Furthermore, the TFA model might be helpful in peer counseling and other affective or decision-making-skill programs. Although much of the theoretical and research literature on the TFA system has focused on individuals or dyads, it seems that the model has value with groups as well (see Clow, Hutchins, & Vogler, 1990, for a group counseling application). In both educational and therapeutic settings, however, more extensive research is needed for this specific application. In our opinion, the TFA system warrants further attention and investigation in school's and other educational settings.

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(continued on page 28)

Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

What changes in how we educate our children do you see as necessary to deal with meeting the challenges of the future?

I would begin my search for an answer to this question by reading the educational scholars of the 1920s, 1930s, and early 1940s. I believe you can find an insightful and detailed discussion of virtually every problem we are facing today in this literature.
—*Lorin Anderson, University of South Carolina*

Stop pushing academics down the grade levels. Try to preserve childhood. Provide social and educational services at one site. —*David Berliner, Arizona State University*

Attention to individual differences. Greater focus on higher order thinking, problem solving, and teaching for conceptual understanding. —*Hilda Borko, University of Maryland*

We must recognize that community building and community maintenance (and learning how to do so) are much more important than amassing soon-to-be-obsolete knowledge, information, and technical skills.
—*Christopher Clark, Michigan State University*

The old saws, but not yet heeded... reduce class size, foster teacher creativity, alternative ways of reaching kids/instructing, *really* use the power of the electronic age.
—*Lyn Corno, Teachers College Columbia*

More attention to personal development and to fostering the motivation to learn and to be effective, rather than the obsession with achievement scores.
—*Edward Deci, University of Rochester*

We need to help children learn to deal with problems not simply by assigning problematic tasks to them in school, but by giving them opportunities to formulate their own goals and to work out strategies for their achievement.
—*Elliot Eisner, Stanford University*

Education is in dire need of greater levels of support, both financial and personal, from private and especially from government agencies. —*Thomas Guskey, University of Kentucky*

Reaffirming of a moral mission of schools. Smaller school-communities. More authority and better training for teachers.
—*Kevin Ryan, Boston University*

We need to organize our schools to allow for flexible scheduling and integration of subject areas. Technology must be embedded in every aspect of school life. Teachers must be more aware of cultural differences and bridge the gap between children's background knowledge and what is to be learned in the curriculum. —*Jane Stallings, Texas A&M University*

Changes furnished by relevant research.
—*Ralph Tyler, Center for Advanced Study in Behavioral Sciences*

Increase school year to 220–240 days. Formulate national educational goals. Make use of superior instructional techniques, provide parent-education programs.
—*Herbert Walberg, University of Illinois at Chicago*

Both parents and teachers need to gain more significant roles in determining key school policies. Much of what currently exists under the banner of site-based management does not do this. —*Kenneth Zeichner, University of Wisconsin*

Applications of the TFA System *(continued)*

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MWERA Research Exchange

The following is a list of research interests for some of the membership of the Mid-Western Educational Research Association. Please write to request information or to inform the member of your ability to provide information or services. Please note the following key:

pi = I can provide information and references in this area
ps = I can provide access to subjects in this area
pd = I can provide skills in analysis or design in this area
sa = I am seeking a co-author and/or assistance in this area
si = I am seeking additional information in this area
sr = I am seeking research design or statistics information
ns = I need additional subjects in this area

Administrative recruitment and selection ..... *(pi, si)*
Charles Kline, Educational Administration, G-10 S. Campus Ct. PU, West Lafayette, IN 47906.

Assessment of primary school children ..... *(ps, pd, sa)*
David Way, 719 Maple Ridge Drive, Cincinnati, OH 45150

Beliefs and attitudes in teaching ..... *(pi, pd, si, ns)*
Greg Marchant, Educational Psychology, Ball State University, Muncie, IN 47306

Beliefs and performance of preservice teachers ..... *(sa, si)*
Carol Muskin, 1928 W. Morse #2, Chicago, IL 60626

Board of education decision making ..... *(pi, pd, sa, si, sr, ns)*
Linda Lyman, Bradley University, 308 Westlake Hall, Peoria, IL 61625

Career indecision, antecedents of career choice ..... *(pi, si, sr)*
Paul J. Hartung, 218 Bowman Drive, Kent, OH 44240

Chronic illness in children, psych. dev. and education ..... *(pi, sa, si)*
Cynthia Dieterich-Miller, 1983 E. 24th-Rhodes, CSU, Cleveland, OH 44115

Computers as tool for instruction, LOGO for math/geometry ..... *(pi, pd, sa, si)*
Mian M. Yusuf, Teacher Ed., UW-Parkside, Box 2000, Kenosha, WI 53141

Cooperative teaching in mathematics ..... *(sa, si)*
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Creativity, assessment and enhancement ..... *(pi, pd, si, sr, ns)*
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Discipline and curriculum design, high school ..... *(pi, ps, pd, sa, sr, ns)*
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Educational administration, H.S., multicultural population ..... *(ps, pd, sa, sr)*
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Generalizability theory, equating and scaling ..... *(pi, pd)*
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Gifted, career development ..... *(pi, pd, si, sr, ns)*
Albert Bugaj, Psych., UW-Marinette, 750 W. Bay Shore, Marinette, WI 54143

Learning opportunity differences ..... *(pi, sa)*
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Mnemonic learning strategy applications ..... *(pi, ps, pd)*
Russell N. Carney, Psych., SW Missouri State University, Springfield, MO 65804

Multicultural education, culturally responsible pedagogy ..... *(pi, ps, pd, si, sr)*
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Multicultural/equity education, K-12, teacher ed. ..... *(pi, ps, pd, si, sr, ns)*
William G. Sparks III, 101B McCormick Hall, ISU, Normal, Illinois 61761

Multicultural/urban settings: problems faced by teachers ..... *(pi, pd, si, ns)*
Deborah L. Bainer, OSU-Mansfield, 1680 University Drive, Mansfield, OH 44906

Observation as a pedagogical skill ..... *(pi, ps, si)*
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Perceptions regarding higher education ..... *(si, ns)*
Linda H. Chiang, 1100 E. 5th Street, Anderson University, Anderson, IN 46012

Performance evaluation of classroom teaching ..... *(pi, pd, sa, ns)*
David Way, 719 Maple Ridge Drive, Cincinnati, OH 45150

Preparation of pre- and in-service teachers in assessment ..... *(pi, ps, pd, sa)*
Cynthia Dieterich-Miller, 1983 E. 24th-Rhodes, CSU, Cleveland, OH 44115

Representation use ..... *(pi, pd, sa, si, sr)*
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Self-concept in beginning teachers, induction programs ..... *(ps, si)*
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Self-concept/self-esteem and teacher effectiveness ..... *(ps, sa, si, sr)*
William G. Sparks III, 101 B McCormick Hall, ISU, Normal, Illinois 61761

Self-regulated learning ..... *(pi, pd, sa, si)*
Reinhard Lindner, Educ., Horrabin Hall 80, W.I.U., Malcomb, IL 61455

Structural equation modeling (LISREL), path analysis ..... *(pi, pd)*
Ralph O. Mueller, Educational Research, University of Toledo, Toledo, OH 43606

Supervision of instruction ..... *(ps, si)*
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Teacher support behaviors and interactions ..... *(pi, si)*
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Testing, bias, legal/validity aspects in credential exam ..... *(pi, pd)*
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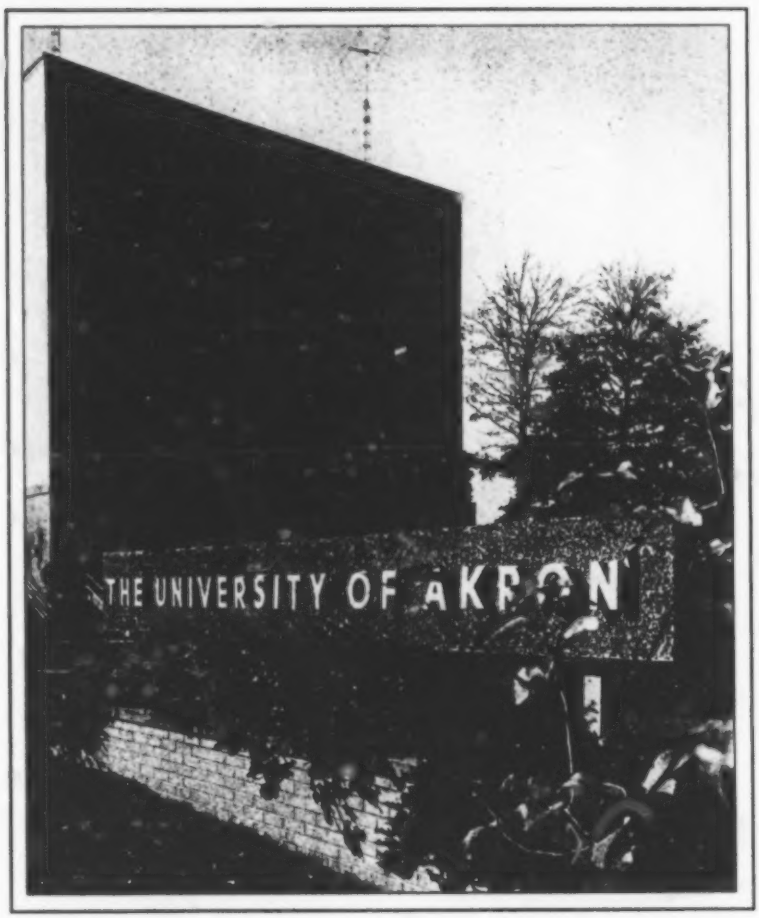

Special Multicultural Issue

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As the minority populations of the United States increase, greater attention is being paid to the educational needs of minority children. Educators and educational researchers are beginning to respond to these needs through increasing efforts to investigate and facilitate their learning.

In an effort to address the topic MWERA presented a series of invited addresses on multicultural issues at its 1991 Annual Meeting. We also planned to include a multicultural section in this issue. That section has grown to consume almost the entire issue, containing several articles and the reviews of two books which have received considerable attention. In late September 1991 when *Publishers Weekly* replaced their $30,000 cover ad with a letter recommending that George Bush read *Savage Inequalities*, it seemed to be a book that merited our attention as well. Henry Giroux's new book, *Border Crossings*, presents a theoretical basis that is also likely to have broad implications for education and educational researchers. There is power in diversity that should be explored, supported, and celebrated.

As always, we hope you enjoy the *Mid-Western Educational Researcher*. We especially hope that you will contribute to the journal with your comments and manuscripts. The *Mid-Western Educational Researcher* is an excellent place to publish your AERA papers and other manuscripts; so please submit your papers and encourage your colleagues and students to do so.

Are we in your library? You can do a lot to help MWERA and the *Mid-Western Educational Researcher*. In addition to encouraging your colleagues and students to join the Association, you can make sure that the *Mid-Western Educational Researcher* is available in your college library. Your college library can join MWERA just like any individual for the price of a membership (currently $18). This is an incredibly low price for a library to pay for a quarterly. Please take whatever procedures are necessary to add the *Mid-Western Educational Researcher* to the shelves of your library.

MWERA Communication & Update—See you in San Francisco!. MWERA is sponsoring a get-together in April at the annual meeting of the American Educational Research Association. The event will be held Wednesday evening, April 22, in the room of Greg Marchant and Isadore Newman at the Hilton Hotel. More details will be available at the conference. Please stop by.

ON THE COVER

The University of Akron is Ohio's third-largest university, with a total enrollment of 29,779 students as of Fall 1991. The University's 10 academic colleges offer 154 baccalaureate, 47 master's, and 17 doctoral degree programs. A leader in rubber and polymer research since 1909, UA is considered the world's premier synthetic polymer research institution. The University was founded in 1870 as Buchtel College, later was named The University of Akron, and became part of Ohio's state-assisted university system in 1967.

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The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 5, Number 2 Spring 1992

FEATURE

The Virtues of an Educational Semiotic
By Gary D. Shank, Northern Illinois University, and Donald J. Cunningham, Indiana University
2

ARTICLES

Multicultural Education: Thoughts and Suggestions for Commitment
By Mary Ann Flowers, Cleveland State University
5

Multicultural Concerns in Educational Research
By James Boyer, Kansas State University
7

Case Studies in Culturally Responsible Pedagogy
By Tonya Huber, Scott Hueger and Jeannie N. Purcal, The Wichita State University
9

Call for Proposals
16

Culture, Style and Equity in Education: An Interview with Asa Hilliard
By E. Jean Harper, Dayton Public Schools
23

Multicultural Considerations in Assessment
By Lorie A. Spadafore, Ball State University
26

African-American Male Academies from a School-Choice Perspective
By Thomas E. Malgette, University of Arkansas-Fayetteville
27

Does Direct Experience Change Education Students' Perceptions of Low-Income Minority Children?
By Martin Haberman, Linda Post, University of Wisconsin-Milwaukee
29

Book Review: Postmodernism and the New Politics of Education
Reviewed by Dennis Carlson, Miami University
32

Book Review: Nothing has Changed
Reviewed by Jesus Garcia, Indiana University
35

Voices in Education
Inside Back Cover

MWERA Publication Address
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The Virtues of an Educational Semiotic

By Gary D. Shank, Northern Illinois University, and
Donald J. Cunningham, Indiana University

Between the two of us, we have dedicated a substantial amount of effort to the topic of semiotics—some thirty years of study, several hundred articles, book chapters, and conference papers; two fellowships; attendance and participation in at least six major summer long institutes and at least fifty shorter conferences and sessions; organizing, chairing and fostering over thirty "open" sessions and special interest groups at various scholarly meetings; editing and/or contributing to two special issues of journals on semiotics and education (one in education and one in semiotics); and steady work on a collaborative book on the topic that will be finished…some day.

In the face of all this effort, there is a question that many people in the field feel too polite to ask, but which nonetheless lingers under the surface of many of our joint and individual interactions with our colleagues in education: What is the point of all this work on semiotics, anyway? Or, what good is semiotics in education after all? We would like to help out our friends and co-workers in education, and raise that question ourselves in this brief article. We are working to help define and implement a discipline of educational semiotic. Why should anyone do this? In short, we argue that educational semiotic deserves to exist, because it is a virtuous idea.

Virtue is one of those words which, ironically, have a semiotic history to them. In our culture, the term 'virtue' has worn a puritanical connotation, so that anyone who uses the term risks triggering images of repression and authoritarian prescription in the name of some narrowly defined band of 'goodness.' We use the term 'virtue' deliberately, because we want to address that sense of exclusion and superiority head on. Educational semiotic thinking and practice is virtuous not because it excludes ways of thinking, but because it inserts and builds upon new ways of thinking. It is the virtue of discovery, and not the virtue of verified restricted action. The primary virtue in education is clarity. However, before we can extol the virtues of semiotics, we need to define it.

Some Preliminaries

We will not, in this brief space, provide a comprehensive overview of semiotic theory (see the reference list for papers in which we attempt this). But we need to briefly characterize the central concept underlying semiotics, the sign, before discussing the virtues of the general approach. Simply put, the subject matter of semiotics is semiosis, the action of signs in all domains of life. Within semiotics, these domains are limitless, from the action of genes to the co-evolutionary analysis of Gaia. As educational semioticians, we are interested in the action of signs in educational practice and research.

Signs are things that stand for something else. A sign is operating when it brings to mind something other than itself, as when the word "pencil" brings to mind the object with which we write, smoke brings to mind the fire that caused it, or the stick figure on the restroom door brings to mind the gender of the preferred user.

Semiotics as a field makes the bold assertion that human cognition is accomplished entirely with signs, that we have no direct access to the real world. Our understanding of the world is entirely mediated by signs, and therefore to understand human cognition, we must understand the nature of our signs: What is a sign? How is one sign related to another sign? What do signs reveal about the real world? What do they obscure? How are signs formed? What are the ways in which signs can stand for something else?

Traditional approaches to human cognition are grounded on one side or the other of the classic philosophical conundrum: realism vs. idealism. Realist views, the more common in educational circles today, argue that human cognition has the potential to be a mirror of reality. Sign-like processes, if they are considered at all, tend to be regarded as error—of perception, memory, intelligence, etc. Idealist approaches posit nothing *but* sign process, where reality is that which we construct with our minds. Semiotics, in our thinking, constitutes a genuine third alternative, not simply some compromise between realism and idealism. While we disagree among ourselves about the character of this third alternative (this is not the place to pursue this debate), we agree that the solution is grounded in the notion that signs are *shared*, that they exist fundamentally as a means of *communication* between organisms, and that we literally bring forth the worlds in which we find ourselves in a form of structural coupling with other organisms.

Semiotic Virtues

While there are many ways that we can describe the 'virtues' or 'rightness' of an educational semiotic, we feel that there are three main sources or venues of virtue that an educational semiotic can foster in our field.

Semiotics restores discovery/invention in inquiry. The first virtue of an educational semiotic is based on the fact that it is a powerful tool for the basic researcher in education. Basic

research in education has fallen upon hard times lately. We are living in practical times, and it has become the mission of the educational researcher to tell us what is happening in schools today, why these things are happening, and what ought to be done next.

We are supportive of the notion of applied research in education, but we are nervous about the naivete underneath the theoretical base of these applied actions. For instance, there is a great deal of effort in the area of improving reading in our schools. Researchers, to their credit, are going into the schools to find out what is actually happening when children learn to read. But the gist of the approach is that the researchers, whether they realize it or not, are actually trying to confirm or disconfirm whether certain theoretical things are going on in the reading process (i.e., whether reading is behavior change, information processing, etc.).

Why is confirmation/disconfirmation such an important part of the research process? Simply put, research is built upon the logic of verification. When we do research, we try to see if our empirically formulated theories can be confirmed by more directed empirical evidence gathering and analysis. The implication of this position is to push the venue of basic research into the arena of building theories, while applied research becomes the act of trying to confirm, deny, or modify those theories, based on what actually happens in ecologically valid settings of inquiry. We feel that the logic of verification inserts certain virtues into the research process. First of all, it makes the link between theory and practice clear. Second, it allows for independent and non-subjective means to confirm/disconfirm theories. Finally, it should allow researchers to use the acts of confirmation and disconfirmation to correct, based on the findings of research, flawed practices that go on in the schools.

The virtues of verification are not the same as the virtues of discovery. The educational semiotician goes into the schools with an entirely different mission, and armed with an entirely different logic. The educational semiotician (hereafter called the ES) looks at the setting on its own terms, as an environment imbued with layer after layer of meaning. The act of the ES is to uncover, reveal, and examine those layers of meaning, and in particular, to articulate meaning patterns that have, until then, been only covert. This logic of discovery is based on the need to treat the objects of experience as signs: signs to the people involved in the setting, signs to the researcher, and signs to others who come to experience these settings. Furthermore, these signs point to powerful trends of meaning which often derive much of their power from being unarticulated.

Let us try to characterize this virtue with a concrete example. Suppose we stroll into a second grade classroom and observe a reading circle in progress. The verificationist researcher will immediately monitor this reading circle to see which basic theory of reading instruction is being instantiated. Once she discerns this, her next move is to determine how well the theory has been applied. Then, and finally, she determines how much effect, if any, this applied version of the theory, has had on the improvement of reading skills of these second graders, using the techniques and measures consistent with that theory.

The discovery researcher, armed with an educational semiotic perspective, is up to something entirely different. She is more interested in monitoring the situation as a complex of experiences. What are the children doing? Are they paying attention to the task? Are they daydreaming? If we ask them, what will they say that reading, and reading circles, mean to them? What are the underlying assumptions about teaching that seem to inform the teacher, and how does the teacher feel about second graders? Are there any behaviors, or actions, or material cultural artifices, in the setting that draw our curious attention to them? If we apply a metaphorical frame to the reading circle, what do we find? What do we find when we apply several different metaphorical frames, such as 'reading circles are like factories,' or 'reading circles are like clubs,' or 'reading circles are like corporate board meetings' and on and on, up to the creative discretion of the discovery inquirer?

Treating the world as a panoply of signs allows the discovery inquirer the justification to do her research, without having to twist and turn the research to make it look like an example of verification research. In other words, the fundamental virtue of an educational semiotic in basic research is that it gives the researcher permission to do a style of work that has no place in a world where only verificational research is allowed. Note that this does not replace the need to do verificational research; it expands the process of inquiry.

Semiotics increases the bandwidth of educational thinking

Currently, educational theory, research and practice is derived from a fairly narrow band of theory and method. Most research is grounded in psychology, some anthropology, some sociology, and a smattering of field wisdom and common sense. Theory is based on verificational research findings and a fairly narrow range of philosophical and policy works. Finally, practice filters these prior effects through an inertial system of administrative and grassroots practices.

The worldview of education reflects the prevailing worldview of our entire culture, which is one of specialization, or narrowidth thinking. Specialization is not a fundamental property of reality, but is a cultural-historical accident of the fact that the institution of education flourished during the industrial revolution, where specialization was the order of the day. Now that we have moved into the information age, we see that specialization needs to be constantly tempered with a more broad bandwidth of thinking and modeling. Narrowcast applications of educational theories are in fact being replaced, more or less unsystematically, with broadcast patterns of thought and insight. Our system is in need of some way to get a handle on this problem,

(continued on page 4)

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and we feel that educational semiotic is part of the answer. The secret lies in the fact that the 'sign' is strictly a formal concept and so is not dependent on content per se. Therefore, a system of signs can be as broadcast as we might want it to be, and if the elements all function as signs, they can be incorporated into a larger and systematic frame.

Let us conclude this section with a concrete example. The ES is back in front of the reading circle. What avenues of learning and understanding can the ES bring to bear in this situation? Well, he can draw from a vast domain of related fields. How is reading like singing? They both involve the decoding of written symbols to vocal sounds. How is reading like playing a musical instrument? They both involve the means to interpret existing text and to construct new texts. Are the similarities and difference informative? Here, we have the ability to create a complex interplay between the reading, the singing, and the playing. Both singing and playing a musical instrument are often done in group settings, typically requiring a complicated coordination of separate but related actions. What might reading look like if similar conditions were imposed in the instructional setting? Note that there is no prior requirement that the question raised should make immediate sense: this is discovery, even invention research, after all, and not verification research. In short, the link between the discovery aspects of the inquiry and the abstract nature of the sign act to invite, rather than exclude, correlated and even non-correlated avenues of inquiry.

We are not arguing for a completely "free-form" mode of inquiry. The extent to which a consideration of alternative means of interpreting a situation (of applying an alternative sign system) is useful must always be submitted to some sort of instrumentality criterion: Does this analysis inform our understanding of the complex social situation which typifies the educational process? Do the insights stand up to the test of more traditional verification research? In essence, we are proposing that educators and educational researchers heed Sherlock Holmes' warning, that it is premature to theorize before all the "facts" are in. We must collect as many observations as we can from as many perspectives as seem relevant, and *then* hypothesize a theoretical state of affairs in which the observations make sense. Unlike Holmes, however, we educators seldom have anything as concrete as a dead body or a smoking gun on which to ground our theorizing. This makes our task at once both more frustrating and rewarding.

Semiotics redefines pedagogy

So far we have stressed the openness of semiotics, its ability to entertain a variety of perspectives in a seemingly ecumenical, self-reflexive manner. But semiotics also entail a set of values of what are appropriate virtues to be pursued in various applied settings: medicine, science, music, and education. That is, semiotics also has a perscriptive side: Given that human semiosis is the action of signs, what is the purpose of education? If semiosis is an ongoing process (and may even be thought of as a definition of life), what role is left to the educator?

Again, we have written extensively on this topic elsewhere and can only briefly summarize our view here. Since semiosis is the action of signs and our knowledge of the world is always mediated by signs, one overriding goal for education is to provide experience with the semiosic process. How do the signs we use color or influence our world-view? What are the consequences of using alternative signs? A pervasive and largely benign effect of semiosis is that we tend to use those signs through which the world makes good sense to us, that seem "right." And we tend to assume that others see things in roughly the same way we do. That our worldview is constructed from signs is largely invisible. Providing experience which elevates our world view to a conscious level typically entails bringing up alternative views for comparison, as when children study cultures different from their own.

In a classroom with which we have worked, the teacher is exchanging material (stories, letters, photographs, HyperCard stacks, etc.) with a similar classroom in Northern Ireland. The children in both cultures are constantly surprised by the differences that have been revealed, from simple things like the way a date is written or the likelihood that the family owns a car, to the extreme, as when the children in Northern Ireland talk about the "Troubles" (the sectarian violence). The children in both cultures are invited to put themselves in the perspective of the other, and examine their own cultural practices based upon this new perspective. What would it be like to live in a town where Army patrols can be seen several times a day? To come upon a policeman with a cocked semi-automatic weapon? On the other hand, what is it like to live in a culture where personal crime is common (such crimes are rare in Northern Ireland in comparison to the United States)?

This example embodies many of the principles of a semiotic pedagogy about which we have written elsewhere. Specifically, we have proposed the following guidelines:

- Provide experience with the semiosic process.
- Provide experience with and appreciation for multiple perspectives.
- Embed learning in realistic and relevant contexts.
- Encourage ownership and voice in the learning process.
- Embed learning in social experience.
- Encourage the use of multiple modes of representation (alternate sign systems).
- Encourage self-awareness of the semiosic process (reflexivity).

Earlier we proposed that at the heart of semiotics lies the notion that signs are *shared*, that they emerge from a communicative coupling between individuals. This theme pervades all of the guidelines listed above. But we want to be clear. We are

(continued on page 6)

Multicultural Education: Thoughts and Suggestions for Commitment

By Mary Ann Flowers, Cleveland State University

Abstract

The article presents two points regarding multicultural education: that multicultural education is misunderstood, and that there is a lack of commitment toward multicultural education by the educational profession as well as allied professions. The author gives definitions for multicultural education and makes suggestions as to how professionals can become advocates for multicultural education.

A population growth for the 21st century in America is projected for racial and ethnic groups of color according to demographer Harold Hodgkinson (1985). The population boom is predicted for African-Americans and Hispanic Americans by the year 2000. For the first time in America's development, people of color will outnumber Whites. This increased diversity in the United States has attracted the attention of educators, researchers, scholars, as well as people in the business sector. In turn, this demographic shift seems to have brought about a heightened interest in multicultural education and issues related to diversity in the United States. Yet, multicultural education seems to be a cliché phrase used to portray a sense of a foreboding inevitable future: A drastic necessity to change a much practiced and covenant point of view. This prescribed mainstream view is one of male, White, Anglo-European, and status quo. Although the phenomena of diversity concerns are not new, as witnessed through civil rights struggles of African-Americans, Hispanic Americans, Native Americans, women, English-as-a-second-language populations, handicapped persons, religious minorities, and most recently improved rights for sexual preference, there is a surprising lack of comprehension of the scope and application of multicultural practices throughout the nation's educational system in particular. So why the lip service to multicultural education and issues of diversity? The answer seems simple, a misunderstanding of the premises on which multicultural education are founded and a lack of commitment based upon these misunderstandings.

What is clear about this demographic change is that those who have been traditionally tagged as racial minorities will soon not be minorities in the raw definitions utilized in previous decades, i.e. the 1950s through 1980s. What also seems clear is the need to address the ignorance associated with the definitions and assumptions of multicultural education. Advocates of the movement recognize the realities of the human experience in a myriad of intricate interactions. Additionally, the concept acknowledges that requisite to the educational process are issues of race, culture, ethnicity, gender, language, sexuality, socioeconomic status, religion, and exceptionalities (Banks & Banks, 1989; Grant & Sleeter, 1989; Hernandez, 1989). These important premises encompass the notion that, "multicultural education is for all students (Hernandez, 1989, p. 10)," and that multicultural education is equated with effective teaching (Hernandez, cited in Payne, 1983). Because teachers play a significant role in students' academic development and subsequent achievement, they make an important difference in the lives of children (Ashton & Webb, 1986). The National Council for Accreditation of Teacher Education (NCATE) has recognized the need for multicultural education as a professional component in teacher education programs in its policy manual (NCATE, 1987).

With the nation's continued interest in educational reform, the need for the "best and brightest" becoming attracted to the education profession, and improved student achievement outcomes, why has multicultural education been overlooked as a response to these issues? Knowing within less than a decade the United States' population will become far more diverse in race, language, and ethnicity than ever recorded in our nation's history, why does multicultural education remain more at the discussion level and less at the implementation level? In a word, the answer to these questions is commitment. A pervasive internal change in attitudes among educators, scholars, researchers, therapists, practitioners, textbook writers, publishers, historians, and curriculum developers is necessary toward making commitment for multicultural education a reality within the American school system. All segments that interact with our nation's schools, such as social service agencies, are also targets for the same need in attitude adjustment.

At this point in time, a national plan of action would seem premature. Discussion of the issues tend to take the form of mere rhetoric or the voiced concerns of underrepresented populations. However, these multicultural education advocates offer a few suggestions to encourage the discussion of the issues related to diversity. First, educators should become converts realizing that the concerns of a diverse society will not go away just because they are not consciously acknowledged. Second, as professionals we should spread the word through journals, newsletters, workshops, seminars, colloquia, professional forums, conferences, and formal and informal discussions. We should

(continued on page 6)

Multicultural Education *(continued from page 5)*

write letters to educational departments on the state and national levels, attend school board meetings for the expressed purposes of diversity issues, meet with church leaders and groups, and pursue any other available avenues of communication. The commitment toward multicultural education has to become a core element of professionalism. Its value can only be transmitted through assertive widespread efforts via modeling, practices, and applications.

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The Virtues of an Educational Semiotic *(continued from page 4)*

not proposing that education is largely a process of transmitting a message from a source to a destination, from a teacher to a student. Rather, the process is one of dialogue, negotiation of meaning from shared social experience. The teacher, as mentor, becomes a person who attempts to extend the range of experience from which the learner can construct knowledge, serving a scaffolding function like that described by Vygotsky. The "message" or the "meaning" emerges from both the source *and* the destination in a dynamic process: semiosis. Thus, it is impossible to think of semiosis, and therefore learning, as an isolated process, taking place within the confines of any individual (any individual mind). Education, as all forms of semiosis, takes place in the dynamic interplay of sign structures between individuals.

Signposts for the Future

As we have said throughout this article, the purpose of an educational semiotic is to make the entire process of education better. We feel that the virtues of controlled discovery, broad domains of inquiry, and meaning-oriented pedagogy will, if put in place, modify our field for the better. We recognize that other positions (e.g., constructivism) hold similar goals, but argue that they do so without the advantage of a well-developed, formal doctrine of signs.

What then, would the future hold for the educational semiotician? We see three areas of particular promise over the horizon (semioticians like to think in terms of triads). First of all, an educational semiotic base would allow for an educational system where specialities become less departmental, and more interdisciplinary. Can you imagine children studying the aesthetics, history, and biophysics of dance? Or the poetics and philosophies of government?

Second, a system grounded in an educational semiotic would allow for teachers to witness their philosophies of teaching, rather than simply transmit them. When we focus reflexively on our impact as a sign of learning, we become more vibrant and alive as teachers, instead of being simple conduits of knowledge.

Third, and most importantly, we see that an educational semiotic could help us restore a world of learning where the questions are just as important, and actually even more important, than the answers. One way of characterizing semiotics is to say that it is a view of the world where every experience is the answer to at least one unstated or unknown question. In a sense, life is one big game of *Jeopardy*, where our roles as edu-

(continued on page 8)

Multicultural Concerns in Educational Research

By James Boyer, Kansas State University

The new knowledge generated by academic practitioners concerned with educational research will continue to be a priority for some time to come. Perhaps no other area of work within professional education is as complex as the concerns about research, especially that produced by graduate students and their mentors who may seek external funding for the conduct of that research. Multicultural concerns include the raising of the priority of such research to focus on issues of diversity in topics, in research teams, in the framework of dissemination, and a host of other endeavors.

There are several critical dimensions of multicultural education which the research community must embrace in order to remain a viable entity within the academic framework of American education. Implications for race, gender, economic class, language, exceptionality, leadership, and ethnicity are all part of such dimensions. Common themes of multicultural considerations include the following: (a) recognizing racial/ethnic identities, (b) understanding diversity, (c) multiple learning environments, (d) relationship of issues to academic disciplines, (e) human rights, social justice, and choice, and (f) inclusion of diverse populations. Add to these concerns the continuing factors of policy, program, and procedures and one realizes how critical it is for educational research to expand its parameters when discussing "research." There is no denial that traditional research methods are essential to the research activity within the educational community. However, the definition of research has been too narrow to embrace much which needs to be addressed. The following are categories that lend themselves to educational research activity, but which rarely get attention, particularly at the doctoral level in American education:

1. Historical research—that which builds a chronology of persons, groups, or issues not normally studied by traditional researchers in the professional research community.

2. Descriptive research—that which defines a reality and offers findings which do not readily lend themselves to quantitative reporting—though they may contribute to professional understanding of teaching, learning, or consumer issues.

3. Creative research—that which is the result of compositions in educational theatre, music, art, drama, photography, or other areas—including poetry.

In addition to traditional experimental research, these categories will need to be addressed within educational research courses, and certainly within the framework of approved theses and dissertations. Experimental research designs have long had something of a monopoly on the conduct of educational research. In the future, multicultural concerns will include friendly confrontations with the assumption that historical, descriptive, and creative research designs have equal merit in attempting to generate new knowledge on which to base professional practice.

Multicultural Research Production

New definitions of research production must include issues of diversity. Failure to embrace such issues will call for major limitations on its dissemination, appropriateness for professional practice with diverse student populations, and certainly its usefulness in understanding human service in public education.

Multicultural Research Consumption

Which research is consumed most by those who would offer their services in instructional roles in America, particularly in cross-racial, cross-ethnic settings? To what extent does this consumption of published research impact perspectives on teaching and learning for this decade? Answers to this kind of question must now become part of preparation in educational research courses.

Research Topics Chosen

As doctoral-level research topics are chosen and approved by university advisers and committees, one must begin to review patterns of topics which get under-emphasized. To what extent are candidates encouraged to engage in research activity on topics which include gender, race, and economic exploitation? To what extent are new researchers encouraged to pursue topics which address language diversity and respect for the ancestral heritage of diverse student populations?

Given the changing demographics of America and American education, the research community is now being charged with expanding its framework, its philosophy of acceptable research activity, and its practices and findings including the perspectives associated with those findings.

The Educational Research Team

Because of the powerful impact of research findings, particularly as they impact national, regional and state policy for schooling, many groups are now becoming concerned about the composition of the research teams who conceptualize, produce, and disseminate such findings.

Authentic Research vs. Basic Research

A basic research study (of any design) is one conducted by persons on populations of which they are not a member. For

(continued on page 8)

Multicultural Concerns in Educational Research *(continued from page 7)*

example, an African-American male who conducts research on a population of Asian females can, at best, only produce a study which we term as basic research activity. He (the African-American male researcher) may feel that he is bringing total objectivity to such research activity, particularly if he has not known Asian females at an earlier time in his life experiences or academic environment. His data may be quite clear, and he may have controlled for a number of variables, and he may have knowledge of many historical, cultural, or other factors. His study is still basic research because he is not an Asian female (or Asian-American female).

An Authentic Research study can only occur when a member of the research samples (groups) being studied is a part of the research conceptualization team, who also involves himself or herself during the conduct of the study and the writing of the research report. This person brings a lifetime of that profile's experiences to the research activity. An Asian woman (or if it is Asian-American women being studied) would then need to be part of the research team conducting research on such women. This kind of analysis will be high priority for educational research in the future.

One of the primary concerns is addressing the essentially monocultural, basic nature of much educational research. This includes the materials used in treatment as well as in training new researchers for participation in educational endeavor. Much research still needs to be done on many topics including culturally-influenced learning styles, the racial history of teachers, the gender history of teachers, authorships of textbooks for teacher educaton, studies on images presented in educational materials, studies on cross-racial, cross-ethnic teaching and learning, studies on ethnic literacy, and studies on administrative policy-making. The role of culture, ethnicity, language, and economic background in impacting research activity is now underexplored. Educational research has a critical role to play in expanding the perceptions now held by many in the academic arena. Multicultural education becomes the framework through which much of this discussion must emerge. Theory-building research is also necessary if American educational research is to maintain its lofty position as a chief influencer of thought and practice for the year 2000.

The Virtue of an Educational Semiotic *(continued from page 6)*

cators is to help learners ask more and more interesting and sophisticated questions.

In the final analysis, we could say that the role of an educational semiotic is to reassert the fact that curiosity is a noble human trait, whether expressed by researchers, teachers, or students. If we can advance the cause of curiosity in education, then the future of the field will be bright and the virtuous status of educational semiotics will be permanently ensured.

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Case Studies in Culturally Responsible Pedagogy

By Tonya Huber, Scott Hieger and Jeannie N. Pascal
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Abstract

Multicultural education is education. The main goal of a multicultural curriculum is to provide quality learning experiences consisting of both formal and informal study and interactive, collaborative classroom and field experiences based on a culturally responsible pedagogy. Educators have a moral and ethical responsibility to facilitate and nurture the growth of responsible citizens of the world. A team of researchers collected case study data in three middle school teachers' classrooms to explore and define "culturally responsible pedagogy" in action.

The determination to become culturally responsible in America's ever-increasingly diverse, global society goes one step beyond multiculturalism as it has been implemented in many American public schools. Culturally responsible educators are not content to teach *about* ethnic groups—they are responsive to the cultural identity of the learner, as well.

Accreditation standards focusing on equality in the professional education unit require that institutions address the issue of diversity and multiculturalism. Teacher educators "have a moral and ethical *responsibility* to prepare teachers to be culturally responsive" (Smith, 1991), that is, to enable teachers to create, implement and evaluate curriculum and instruction that respond to the educational needs of diverse learners. Culturally responsible content and approaches recognize the influences of culture, language, ethnicity, race, gender, religion, exceptionality, socioeconomic level, and home environment. Culturally responsible attitudes reflect an appreciation of the cultural and social norms of each learner.

This interpretation of culture goes beyond the "tacos on Tuesday, Indians at Thanksgiving, Black history month" approach to diversity. Curricula, instructional methodologies, and pedagogy evolve from a knowledge base including (a) identification of cultures, (b) understandings about how cultural characteristics influence learning and thinking, and (c) respectfully sensitive identification of individual and home cultures.

Anthropological studies of education, exploring the culture of schooling (Longstreet, 1978; Bennett, 1990) in the traditional model of education in America, have highlighted the need to explore schooling in a cultural context (Roberts & Akinsanya, 1976; Spindler & Spindler, 1987; Trueba, 1987; Spindler, 1988; Abi-Nader, 1990). As explained by Ricardo Garcia (1991) in *Teaching in a Pluralistic Society:*

> The view of teaching and learning that has prevailed reflects the values, attitudes and beliefs of middle-class Americans, seeming to reflect the nature of all students and presuming to provide standards of that culture as the final criteria of right and wrong. In his synoptic view, middle-class culture sits at the hub of the teaching-learning universe; other cultures are far removed or nonexistent. The presumption is that only one model citizen exists. (p. 9)

A teacher whose philosophy is founded on this narrow view of students perceives reality as a unified whole with a single correct answer to any question. A teacher planning and implementing curriculum from a culturally responsible perspective perceives reality as a diversified whole with differing correct answers to any question. It is paramount to a teacher in a multicultural, pluralistic society to develop the ability to see reality from the perspective of other cultural and ethnic groups.

Cultural awareness is targeted by Bowers and Flinders (1990) in their definition of "responsive" teaching.

> The professional judgments of the teacher should be based on an understanding of how the student's behavior and thought processes involve, to a larger extent than is generally recognized, the reenactment of cultural patterns. Being responsive...thus means to be aware of and capable of responding in educationally constructive ways to the ways in which cultural patterns influence the behavioral and mental ecology of the classroom. (1990, p. vii)

Case Studies to Define Culturally Responsible Pedagogy

A premise of this research is that the culturally responsible educator recognizes and is knowledgeable about each student's cultural, home, and individual background (Abi-Nader, 1991). Addressing the issue of excellence in multicultural classrooms, Ladson-Billings (1989) identified teachers' background experi-

(continued on page 10)

ences as primary in preparing them to work with students who come from non-mainstream lives. Although Ladson-Billings was specifically addressing the topic of successful teachers of Black students, her guidelines are generalizable to successful teachers of diverse students. Based on the premise that there are teachers who are establishing successful and effective learning environments and engendering student self-esteem, three case studies were developed to investigate how teachers create a learning environment where, regardless of a learner's background, social, academic, and personal development are maximized. Fifteen teachers were identified as effectively interacting with diverse student populations through community endorsement by administrators and peers. Three of the six that were willing to participate were interviewed using ethnographic interview techniques (Spradley, 1979) and had classroom observations (Spindler & Spindler, 1987) of over 50 hours (half of which were videotaped). Half of the students in each class were interviewed, and two of the teachers kept informal journals.

The Case of Josefina Guzman*

developed by Tonya Huber

As each situation in life represents a challenge to man and presents a problem for him to solve, the question of the meaning of life may actually be reversed. Ultimately, man should not ask what the meaning of his life is, but rather he must recognize that it is he who is asked. In a word, each man is questioned by life; to life he can only respond by being responsible.

—Frankl

Josefine Guzman recorded this passage from Viktor E. Frankl's story of Auschwitz in *Man's Search for Meaning* more than a year before she would encounter the concept of culturally responsible pedagogy in a graduate-level research course. A second-generation Mexican-American educator, Josefina espoused culturally responsible pedagogy before she was ever asked to define it. Josefina's affirmation of responsibility equally affirms conclusions reached by Giroux (1986), Ladson-Billings (1989), and McLaren (1989) about a void in the research literature on education—the voice of the minority teacher in the stories teachers tell.

Teacher Conceptions of Self/Other

Guzman's understanding of her students, whether fully conscious to her or not, appears directly connected to what Ladson-Billings has identified as the critical factor of background. Following the initial interview, Josefina wrote in her journal:

> *I had my initial interview with Dr. Huber. I believe I answered her questions sincerely and honestly. The feelings that stirred inside of me were somewhat scary. Feelings from the past were stirred . . . as if to say that my upbringing has been instrumental in my teaching style. I kept picturing myself as a student in a confused world.* [redjn.1.1]

Josefina's writings uphold her initial comments during the first interview when she characterized her background as that of "an ESL student without an ESL program" [redint.1.1]

The ethnic diversity in Josefina's classroom was enhanced by the ESL (English as a second language) group of four students which she had voluntarily "taken in."

> *I added the limited English students because the ESL teacher needed planning time. These students were at level one in English proficiency. I brought these students into my room for one period so that I could help them learn. I also saw this as an excellent time to have the students peer-tutored.* [redjn.1.2]

Guzman's focus on the positive and expectations for success reverberated in the classroom. As one parent responded on the parent/guardian questionnaire: "*She wants them to be the best they can be.*"

Teacher/Student Social Relations

When the female ESL student who had recently arrived from Vietnam appeared at the door of the classroom at the wrong time, rather than send her away, Josefina wrapped her arm around the girl and included her in a small group demonstration of letter writing at the board.

"*Right here, babe, right here,*" [redobs.1-2.1] soothed Josefina as she continued to embrace the girl who was obviously distressed at not understanding where she was to be. As she worked with four ESL students at the board, she directed the activities of the other 29 students in the room. Her directions to the four at the board were dotted with supportive statements to other students in the classroom:

- *Ian, keep 'em in your pack, hon, for now.* [redobs. 1-2.2]
- *Be sincere in what you say. Be positive. No putdowns or negative language. Would someone please explain this to the kids who were not here yesterday.* [redobs.1-2.2]
- *Did you find your poetry folder? We'll get it, son, don't worry about it.* [redobs.1-2.3]
- *Dommers, come here! It's neat to see all you guys so excited about reading these!* [redobs.1-2.4]
- *Thank you babe, You're a sweetheart.* [redobs.8-9.1]

Multiple levels of culturally relevant teaching occurred in this brief ten-minute period of time. Josefina's terms of affection—*babe, hon, son, sweetheart,* and pet nicknames like *Dommers*—helped to develop the feeling of community that is obvious to the observer. Her constant awareness of different abilities and individual concerns means that students are often working on

different projects and activities; her encouragement of collaborative efforts develops this sharing and community building.

During the poetry reading that occurred in the second half of this specific lesson, Josefina's courtesy and commitment to community building were a constant:

- *Whoa! Whoa! Whoa! I need paper down. I need to see your mouth move. Do you have gum in your mouth? (Student nodded and immediately removed the gum to a piece of paper.) Thank you!* [redobs.1-2.5]
- *When Tammy's turn came to read, she responded, "I haven't found a suitable one." Josefina smiled reassuringly and responded, "O.K." and returned to her after six more students had responded.* [redobs.1-2.5-6]

Josefina respectfully interacted with her sixth-grade students showing the logic of her requests, recognizing their unique perceptions of events, and reassuring them through her supportive nonverbal and verbal interactions. As she explained in her journal: *I've got to make contact. I've got to open every heart in that class for that little bit of time. They need to open up their hearts to hear what I have to say.* [redjn.4.1]

The students believed Josefina when she said, as she often did, *"This is gonna be something pretty nonthreatening to start with."* [redobs.3-4.2]

- *Think it through, guys.* [redobs.3-4.2]
- *You don't have to struggle. All you have to do is ask.* [redobs.3-4.2]
- *These are difficult. I don't expect you to know all these.* [redobs.3-4.3]
- *Now are you with me? Do you need some more guidance here? Can you go on your own?* [redobs.3-4.11]
- *Carlotta, do you need time out? No? Then I don't want you doing that again.* [redobs.6-7.1]
- *Think. Get closer to it!* [redobs.8-9.3]
- *Don't fret. Don't get frustrated. I will help you get it.* [redobs.8-9.4]

Josefina's interactions with students were not only culturally responsible to the individual learners they were liberatory in the truly Freirean (Freire, 1986) sense of the term. In Josefina's classroom, students were empowered to learn.

"The Fight"— A Vignette from the Case of Alice Dale

developed by Scott Hieger

> *To this day one of the similarities among various Indian peoples is a quiet soft-spoken manner of dealing with others which results from a worldview that all belong to one another and should be treated accordingly.* (Bendtro, Brokenleg, & Van Bockern, 1990, p. 37)

The 9:30 a.m. bell rang and a flood of students from Highwater Middle School poured out of the classrooms into the freedom of the halls. Students were milling about Alice Dale's eighth-grade language arts class. At the very front row stood James, a male of African heritage, looking around his desk for something.

"Where's my pens?" his mature voice boomed.

To the astonishment of the two observers, James took a swing at Austin with his fist. The punch connected to Austin's jaw and the students around the two made comments like "Oooo" and "Gawd." I think the students around James and Austin thought this was just shadow boxing between friends.

Austin aimed a blow back at James, which caught James on the chest. But James countered by grabbing Austin's arm and proceeded to stagger Austin with powerful punches to his rib cage. James stepped back and the two "friends" separated. It seemed that some of the students around the scuffle now realized this was not "play," and yet the boys in the room laughed and cheered the two on. The girls, however, were concerned. One in particular, Chenoa, made an attempt to stop the scuffle.

"Now quit it!" she yelled.

"Now quit it!" another boy mimicked as Chenoa, grabbed at James's arm.

"You ain't going to hit me yet!" he taunted Austin.

Lunging forward, Austin swung and landed a thundering blow on his opponent's chest. James staggered back several steps and then proceeded to go after Austin with a look of rage in his eyes. Again the guys in the class laughed and cheered the two on. In alarm, I looked up from the camera towards Dr. Huber, wondering why the teacher hadn't noticed what was going on.

Meanwhile, the two "friends" had taken their battle towards the back of the room, knocking over desks and threatening the video equipment.

"James... James... James!.. Stop now!" Mrs. Dale's voice started to rise as she came around from behind her desk at the front of the classroom.

"James!... James!... James!"

With these commands, Alice Dale calmly, but hurriedly, walked toward the youths. I got between the two and separated them. James went to the front of the room and turned back to Austin and the crowd of students: *"COME OUTSIDE PUNK!"*

"Way ta go, James!" a boy replied.

"James, come here... James, come here!"

James ignored his teacher's command and went to the doorway.

"COME OUTSIDE PUNK!" he yelled back to Austin.

"Yeah, way to go, James!" another student added.

Austin moved up to the front of the classroom in an attempt to have another go at James. Alice Dale followed after the boys with a look of concern on her face. Before Austin reached the front of the room a fellow student held him back. Putting his one arm around Austin's shoulder, he patted the glowering student on the chest with his other hand.

(continued on page 12)

James left the room and stood outside the doorway. I moved back to the video camera and returned to filming. Alice Dale and the entire class crowded around the doorway. Austin kept inside the room and watched as James still taunted him from the hallway.

Austin went out into the hall with Alice Dale and the students began to wander away from the doorway and mill about the classroom.

"*There ain't never been anything bad like this in the class before!*" exclaimed Chenoa as she went back to her desk. Several male students were acting out the punches thrown during the fight; they were obviously excited by the spectacle they had just witnessed.

"*People…People…*" Mrs. Dale spoke in a calm even voice as she re-entered the classroom.

"*Now be quiet!*" Chenoa advised her fellow classmates.

"*This is what I want you to do. I want you to get a textbook, and then I want you to take out a sheet of paper and write down what you remember about the story that we read yesterday.*"

"*We didn't finish it!*"

"*I know we didn't finish it. I just want you to write down the part that you remember…I'll be right back.*"

I was silently amazed. Her voice was calm, as if nothing had ever happened. Yet after class that day she stated that in 11 years of teaching this was the first fight she ever had. She didn't seem disturbed at all as she left the classroom to go on down to the office. Even more surprising was the fact that the students immediately went to the book shelf to get textbooks.

"*Who needs a book?*" asked Chenoa as she walked down the row of desks with an armload of textbooks. While she was doing this Billy continued a blow-by-blow description of the fight to the student behind him.

"*Shsh, be quiet,*" said Chenoa.

It was amazing. In a few short minutes the classroom transformed from a free-for-all into a quiet, productive classroom, minus any supervision from an instructor. Each student opened up a book and began to review the story.

Shortly afterwards, Alice Dale returned to the classroom and the lesson began. In her calm restrained voice, she continued with the class as if nothing peculiar had occurred.

When examining this case vignette, emphasis should not be placed upon the actual altercation in the classroom; rather, emphasis should be placed upon the restoration of a productive atmosphere by the instructor and the students. It is hard to reproduce in print the calm restrained tone of voice which was exhibited by Alice Dale and was so admirably captured on the videotape. She remained in control the entire time and imparted this sense of calm to her students.

One might expect that as soon as the instructor left the room the class would dissolve into chaos with students discussing the fight and doing very little of the work assigned to them. Yet, the class quickly distributed the needed textbooks and quietly began work on the assignment.

Were the students responding to the voice and demeanor of the instructor? The actions of the instructor must be instrumental in assessing the students' behavior. While giving instructions, Alice Dale's demeanor reassured the students after the confusion of the fight and set a classroom atmosphere conducive to unsupervised activity.

The Native American heritage of the instructor may well be a possible source of her calm demeanor. During one interview Alice Dale stated, "I identify very strongly as being Indian." [pplint.3.14] A person's beliefs, mores, and behaviors are usually part of one's unconscious worldview and have a direct effect upon our outward, or explicit actions (Garcia, 1991). Many Native American peoples stress observation, restraint, and respect (Hurtado, 1979; Doornek, 1990).

During an interview nearly two months before the day of the fight, Alice explained:

> *I like for the students to feel a calmness with me. I think that they cannot feel calm with me unless we have mutual trust and respect.* [pplint.1.6]

Alice Dale believes that many things go into expressing this calmness:

> *I guess it goes back again to presenting an accepting demeanor in the classroom that is readily apparent to my students, and so much of it is through body language, through eye contact, through tone of voice, through the things that you say.* [pplint.1.10]

How she develops this demeanor in the classroom is hard even for Alice Dale to explain:

> *I feel that I have to have a trust or rapport, or at least give a reassurance to that student that I care about him or her in a personal way, that I care whether they make it. That I'm really interested in them making it, and the atmosphere to me…just an atmosphere in a classroom is of tantamount importance…and yet it's very, very difficult for me to explain how it is that I create the kind of atmosphere that I like to see in a classroom. To me it is a feeling of mutual trust and respect between the teacher and the student, and yet equally as important is the trust that is developed between the students themselves, and their honoring of one another.* [pplint.1.5]

Five students in this class of nineteen self-identified Native American heritage. One of these students, Chenoa, tried to stop the fight and was instrumental in getting the class back on task when Alice Dale left the classroom. The transcription of the fight revealed further evidence of Chenoa's leadership role in the absence of the teacher. She passed out textbooks to students and then admonished a fellow classmate for reenacting the fight. However, Chenoa was not the only student to show

leadership in the classroom, as the video recording of the event visually documented. Two other female students, also of mixed Native American and African-American heritage helped to pass out books to fellow classmates and then proceeded to work on the assignment.

Reviewing the literature on Native American worldview affords an interpretation based on the noninterference model of cognitive development as it has been documented by Tedlock & Tedlock (1975), Scallon & Scallon (1979), and Tafoya (1982).

> Children are allowed a very wide range of behavior. Only actions that might result in serious physical damage are prevented. Minor damages such as the burns that might develop from touching a stove are usually taken as less serious than interfering in a child's behavior and a child is rarely told not to do something.... It is necessary for the person in the superordinate position to ignore the behavior of the child in order to avoid an inversion of the relationship. Paying too much attention to the child would be tantamount to taking a spectator role and to placing oneself in a position that is subordinate to the child...When the child expects indifference and gets strong intervention instead we can suppose that this intervention is felt to be all the more significant. (Scallon & Scallon, 1979, p. 31)

Alice Dale's actions during the fight demonstrated, perhaps unconsciously on her part, this worldview. She did not interfere with the scuffle until the participants were a threat not only to themselves but to the entire class. At that moment, she switched from calling out the boys' names to commanding the two to stop. When desks began to be knocked over, she walked back to stop the two males from fighting.

The use of quiet authority in stressful situations can have a dramatic effect on student behavior. Students often cue their behavior from persons in positions of authority. If an instructor exhibits panic or distress, the students may become panicked or distressed; likewise, if an instructor exhibits a sense of calmness and assurance, then the students will show the same demeanor. Being culturally responsive to the overall needs of the students is of primary importance. A traditional Native American worldview may provide an instructor with an emotional perspective necessary to deal with stressful and dangerous situations and their aftermath.

"Little Nato"

developed by Jeannie Parscal

"Little Nato" is located in what might be described as a transitional area of a metropolitan city. The classroom is a no-frills portable beige unit, one of nine placed in double rows alongside the main school building. Although the first impression might be one of drabness, as I enter the classroom the contrast of the interior is a shock to my senses. Sunlight filtering through a wall of windows casts a pleasant glow that is reflected off of the plants within the room. Desks are temporarily clustered in groups of three or four, interspersed with the greenery and aquariums, bird cages, and bookshelves. An area approximately one-fourth of the room size is carpeted and furnished with a rocking chair and plush throw pillows. Inhabitants of the room are diverse and often entertaining: *Baby* often flies about the room when she is not perched on the teacher's shoulder; *Ginger*, Baby's partner, breaks any threat of silence with a myriad of mating calls; and *Sylvester and Sebastian* are always available to comfort and console the remaining human population. Although the latter two are deemed lowly in stature by most of us, the white/black and white rats are definitely the most sought after and loved by the students. Drop-ins are always welcome, as everyone seems to know that snakes and land crabs and fish of various sort fit right into this creative, educational atmosphere.

In this setting, 6th-grade students learn language arts, social studies, and *life*. The carpeted area is the "rain forest" and is used randomly by students whenever they feel the need to stretch out, or is utilized by small groups whenever more individualized instruction is called for.

The creator of this unlikely place of learning is a 47-year-old African-American female who is known to me best as "Katherine-with-a-K." A name she chose because of its ancestral significance, which is accompanied by an explanation grounded in historical and racial pride.

Coming from a family of professional educators, Katherine has taught for 27 years in elementary and adult education. My first encounter with her was unusual, in that she wore clothes of a by-gone era, with a bandanna tied around her head. As we spoke for the first time, she began to peel an unsightly scar from her face. She had just returned from one of her many performances of Harriet Tubman, which she delights in sharing with other schools, churches and community organizations.

A simple conversation between two African-American boys exemplifies one of the major findings in Katherine's case: her polite and positive manner used in communicating with her students:

> S1 *"Did M. K tell you to vacuum the floor?"*
> S2 (while vacuuming the Amazon) *"No! she* asked me."

The tone of voice and the young man's response indicated the difference that he felt between being asked to do something and being told to do it. I observed many times as students initiated the vacuuming of the carpet or feeding and watering of the animals. Their sense of pride was apparent in the contributions that they made, which might otherwise have been thwarted by a less sensitive teacher. Two factors are significant in regard to self-esteem and education." A strong bond exists between a student and a competent caretaker which aids in development

(continued on page 14)

of skills and confidence, and social skills and self-esteem enable a child to take advantage of educational opportunities (Comer, 1988). In the absence of positive, nurturing caretakers, the responsibility of fostering healthy emotional development may be left to the teacher. Secondly, sociocultural misalignment may also occur between home and school, and it becomes the teacher's responsibility to bridge the cultural gap by understanding the home culture of the students. Katherine is well aware of the sociocultural misalignment that can occur between home and school, when scholastic ethnicity interferes with family ethnicity:

> *Then there are kids who . . . perhaps didn't get any rest. They got home and Mom and Dad were drinkin' and fussin' and fightin', and they had to leave everything and go seek shelter somewhere . . . or move around from house to house for two weeks at a time just to keep Momma's boyfriend from finding them. That's a reason; that's not an excuse. I make allowances for that.* [Int.3]

Katherine understands the developmental needs and cultural backgrounds of her students. She gives her students a reason to care by facilitating their personal growth as well as academic. Believing that students should become responsible for their education, she constructs a learning environment that caters to, as she calls it, "*The needs of their growing bones.*" [Int.2]

Students and teachers are "products" of their culture—the framework in which they meet. Involved since the age of 17 in civil rights issues; Katherine's empowering of her people is brought to life anew within the classroom as she seeks to empower her students. By structuring a positive, creative learning environment, Katherine facilitates the natural curiosity and quest for knowledge that her students bring to the classroom. Attending to the intellectual, emotional, and physical needs of the child, Katherine successfully reflects a pedagogy that is indeed culturally responsible. As one student so astutely observed about the "jungle" environment she had created: "*This room helps us breathe naturally.*"

Conclusion

Three different teachers, three different cases—each provides a model for the exploration of culturally responsible pedagogy and educational excellence in meeting the needs of diverse learners and facilitating success for all students. As culturally responsible educators, these teachers each recognize the significance of the student's cultural, home, and individual background. Equally, each of these educators is vitally aware of her heritage and individual background.

While American classrooms have continued to diversity, the view of teaching and learning that has prevailed in this country reflects the values, attitudes, and beliefs of middle-class Americans. But as the traditional, mechanistic paradigm of education is being challenged by a more holistic, qualitative paradigm, we are discovering that teachers' experiences and backgrounds play a more significant role in education than has been recognized.

If culturally responsible minority educators provide models for learning, mentoring, and cultural patterning, then educators can learn from these teachers and additional case studies of culturally responsible educators can enrich the knowledge base for teacher education.

Note. All names have been changed to ensure confidentiality of participants. Bracketed information indicates color coding for each teacher (e.g., red, purple = ppl) and whether the information was obtained from a journal entry (jn), classroom observation (obs), or an interview (int).

"Restructuring to Reclaim Youth at Risk: Culturally Responsible Pedagogy," which included the research vignettes included in this manuscript, was presented at the Thirteenth Annual Meeting of the Mid-Western Educational Research Association, October 16-19, 1991, Chicago, Illinois.

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(continued on page 25)

The MWERA 1991 Annual Conference Evaluation Results:

A Report from the Member-at-Large: By E. Jane Williams

Since the 1989 MWERA Annual Conference, evaluations of paper sessions have been conducted. Prior attempts to evaluate the overall program were unsuccessful. However, at the 1991 conference, evaluations rating presentations by Invited Speakers and the overall program, in addition to the paper sessions, were successful. This article summarizes results of these evaluations.

The purpose of the MWERA conference evaluations is to provide the Program Chair with attendees' input for designing the next conference. The instrument used to evaluate the paper presentations provided ratings to evaluate both individual presentations as well as the overall session. Respondents rated each presentation on clarity, organization and interest as well as noting if a paper was provided. The quality of the overall session was rated on organization, adequacy of facilities, coordination of topics, amount of time for questions/discussion, and how well questions were answered. All items were rated on a 5-point scale ranging from strongly agree to strongly disagree. A similar format was used to evaluate presentations by Invited Speakers. Evaluation forms were distributed and collected at the end of the session. All responses were anonymous.

Evaluation of the annual program included ratings on the following program aspects: the usability of the printed program, the number of invited speakers, Wednesday night presentations, Saturday morning sessions, the Friday afternoon Business Meeting, exhibitors, a "meet the editors" session, multicultural education sessions, social events, and the overall conference. All aspects of the program were rated on a 5-point scale from very high to very low.

Only overall results and summary comments will be presented. It should be noted, however, that specific comments/suggestions have been forwarded to the appropriate individuals. Participants desiring individual feedback may contact the Member-At-Large.

Paper Sessions. Completed forms were returned by a total of 218 people attending 31 sessions. Although there were fewer sessions evaluated in 1991, the percentage of sessions returning evaluations (60%) was higher than in 1990 (57%) and 1989 (42%). Results are presented in Table 1.

Table 1

Evaluation Ratings by Category of the MWERA Paper Sessions

Category	N	Mean	SD
The session was very well organized	218	4.57	.63
The facilities were adequate	217	4.29	.88
The topics were coordinated	217	4.35	.80
There was adequate time for questions/discussion	214	3.80	1.33
Questions were answered adequately	197	4.27	.81

Note: A 5-point scale was used.

Again, as in 1990, the item with the highest overall rating was 'The session was very well organized' (Table 1). The item that showed the greatest change from 1990 was 'There was adequate time for questions/discussion.' Responses to this item for 1991 were less positive than in 1990 (1990: X = 4.51, SD = .84). Attendees' indicated the desire for more time for audience participation/involvement either by decreasing the number of presenters per session or by increasing the total amount of time per session. Discussants were considered an asset to the sessions. Discussants were deemed especially beneficial when they were organized; made reflective, insightful and helpful comments/suggestions; allowed for questions and audience participation; gave equal time to all presenters; and were not cynical.

Additional written comments included suggestions in the areas of scheduling/planning, and sessions in general and specifically. Suggestions included requests to provide screens to permit improved readability of overheads, to provide a column to evaluate the discussant; to schedule a lunch break; not to schedule sessions during the Association Council Meeting; to have presenters provide papers; and to have presenters provide the discussant with a copy of the paper prior to the session. Overall, respondents appeared to be very pleased with the presentations and paper sessions.

Invited Speakers. A total of 55 completed evaluations were returned evaluating two of the Invited Speakers, Drs. Levin and Palincsar. Comments regarding Dr. Levin's presentation evolved around three major areas: the presentation, topic, and time. Many noted that this was a very good presentation, timely both personally and professionally, and well organized. It raised philosophical questions such as "What constitutes 'scientific'," and "What provides the most benefit to a discipline?"

Comments about Dr. Palincsar's presentation were reflective of her ability to present, i.e., being a fine presenter, having a high energy level, and serving as a wonderful role model. One individual noted that Palincsar's talk was a nice follow-up to Levin's talk on classroom research!

Overall Conference. Results are displayed in Table 2.

Table 1

Evaluation Ratings by Category of the MWERA Annual Meeting

Category	N	Mean	SD
The design of printed program	37	4.35	.79
Usability of conference program	37	4.30	.88
Having large number of Invited Speakers	37	4.35	.79
Beginning sessions Wednesday night	35	3.89	1.16
Having Saturday morning sessions	35	3.63	1.14
Holding Business Meeting on Friday	31	3.74	1.06
Having exhibitors	33	3.94	1.09
Having 'Meet the Editors' session	35	4.34	.76
Having Multicultural Education session	36	3.92	1.23
Having social events	37	4.24	.68

Note: A 5-point scale was used.

Item responses were fairly consistent across membership groups. Written comments included the following areas: the meeting in general, presentations, the luncheon and speaker, the program, and organizational matters. Much praise was given to the overall conference, i.e., its variety, the allowance for the infusion of young and more experienced scholars as well as student presentations and professional development, its organization with the incorporation of a welcome for new members and social events such as hospitality sessions. Other specific comments/suggestions included: sending guidelines to chairs, presenters, and discussants; holding round table sessions of work in progress; allowing time at the luncheon to socialize before beginning the program; keeping the luncheon 'less busy'; keeping the Business Meeting on Saturday rather than Friday, noting that a large number of Invited Speakers could become problematic; having a "Meet the Editors" session is good, but not every year; and putting more effort into pre-conference workshop details. The Bismarck was considered a good location.

Overall, findings relevant to future program planning included such suggestions as: providing opportunities for discussions at paper sessions by either decreasing the number of presenters per session or increasing the total amount of time per session, and equipping rooms with screens for overheads. Again, overall ratings and comments by respondents about the paper sessions, invited speakers, and the overall program indicated that this was a very good conference.

190 BEST COPY AVAILABLE

MWERA 1992 Annual Meeting

October 14-17, 1992

Plans for the fourteenth annual meeting of the Mid-Western Educational Research Association are under way. There are key activities which include a featured presentation Wednesday evening. **Tom Good**, University of Missouri, will speak on Small Group Learning: Problems and Potential. He will also present the keynote address on the topic of Research on New Directions in Teacher and Student Expectations Thursday morning. The Presidential Address by **Barbara Plake**, University of Nebraska-Lincoln, will be presented on Friday morning. Her topic will be Teachers' Assessment Literacy. The following three events are specifically included to facilitate professional growth: **Graduate Student Workshop** (Thursday), **Exhibits** (Friday), and **Meet the Editors** (Friday).

Several important events/activities will continue on Friday and Saturday. We will have as our luncheon speaker **Tony Riccio**, The Ohio State University-Columbus. His topic will be Making the Big Decisions. Paper and symposium sessions will be scheduled until noon on Saturday.

The most important part of the 1992 conference though is YOU! We need your ideas and your research presented at the annual meeting. We also need you to pass the word about how wonderful the MWERA conferences have been. Please tell colleagues/students about MWERA and the 1992 program and encourage them to join the organization and submit a proposal. MWERA encourages students to present their research. Incentive awards are presented to students who author/co-author a research paper and attend the Business Meeting.

Richard C. Pugh, 1992 Program Chair

Call for Proposals

I. GENERAL INVITATION FOR PARTICIPATION

You are cordially invited to attend and participate in the Fourteenth Annual Meeting on October 14-17, 1992, at the Bismarck Hotel in Chicago, Illinois.

CONFERENCE HIGHLIGHTS:

WEDNESDAY, OCTOBER 14

- Training Workshops.
  Concurrent sessions starting at noon and 3:30 p.m.
- Special Night Session, 8 to 9 p.m.
  Speaker: **Thomas Good**
  University of Missouri
  Topic: Small Group Learning: Problems and Potential

THURSDAY, OCTOBER 15

- Keynote Address
  Speaker: **Thomas Good**
  University of Missouri
  Topic: Research on New Directions in Teacher and Student Expectations
- Division Discussion Meetings
- Graduate Student Workshop
- Evening Social, 6 to 8 p.m.

FRIDAY, OCTOBER 16

- Presidential Address
  Barbara Plake
  University of Nebraska-Lincoln
  Topic: Teachers' Assessment Literacy
- Business Meeting
  Student Research Incentive Awards
- Luncheon
  Speaker: **Tony Riccio**
  The Ohio State University-Columbus
  Topic: Making the Big Decisions
- Exhibits
- Meet the Editors
  The editors of several major journals will display and discuss their journals.
- President's Reception, Bismarck Regency Suite, 9 p.m.

SATURDAY, OCTOBER 17

- MWERA Fun Run
- Paper and Symposium Sessions scheduled until noon.

II. GENERAL INFORMATION

A. Proposals may be in the form of scholarly papers, symposia, workshops, or other innovative formats. Deadline: Must be postmarked first-class by **May 15, 1992**. All proposals will be peer-reviewed.

B. Any educational researcher, whether MWERA member or not, may submit a proposal. Nonmembers whose papers and/or symposia are accepted for presentation must join MWERA upon notification of an accepted proposal.

C. MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals. Unless expressly prohibited in writing by the author(s), summaries

may also be made available to the press or other interested parties upon request. Such limited distribution does not, of course, preclude subsequent publication of a summary or complete paper by the author(s).

D. All persons attending the Annual Meeting, including participants, are required to register for this meeting and be members of the Mid-Western Educational Research Association. All sessions listed in the program will be open to anyone registered for the meeting. A small fee will be charged, and enrollment may be limited for Training Workshop participation. Materials for registering for the Annual Meeting will be published in the *Mid-Western Educational Researcher*.

E. Participants in paper sessions and symposia must distribute handouts to attendees at their sessions. Paper presenters are expected to have a written paper available for prior review by the Session Chair and Discussant. Papers may also be submitted to ERIC for distribution to the profession. This does not preclude formal publication in a journal. ERIC forms will be available at the Conference Registration desk.

F. We are attempting to have overhead projectors available in every meeting room for use by presenters. No other audio-visual equipment will be provided. If special audio-visual equipment is needed, the presenter will have to provide his/her own equipment at presenter's expense.

III. GUIDELINES FOR PAPER PROPOSALS

A. General Information About Paper Proposals

1. Only papers not previously presented or published are eligible.
2. The Program Committee will group papers into sessions, organized by topics of interest to the conference. The Program Committee may, at its discretion, include a discussant to critique the papers in any particular paper session. Those presenters assigned a discussant are to provide a copy of the paper to the discussant two weeks prior to the meeting.
3. Generally, papers will be allotted 15 minutes per presentation. It will be the responsibility of the Session Chair to consult with the presenters, allocate time, and ensure that the agreed schedule is followed.
4. It is the responsibility of the presenting author of an accepted proposal to appear at the Annual Meeting to present the paper. If unforeseen circumstances arise that prevent an author from presenting a paper, it is his/her responsibility to arrange for a suitable substitute to make the presentation, discuss the arrangements with the Session Chair, and notify the Annual Meeting Program Chair: Richard C. Pugh, School of Education, Indiana University, Bloomington, IN 47405, 812-855-4053.

B. Material to be Submitted with a Paper Proposal

- Paper Proposal Cover Sheet (3 copies). See attached form.

- Summary (3 copies of a 2–3 page summary typed single-spaced on 8½ x 11 paper). The Summary will be used in judging the merits of the proposal. It should contain as many of the following guidelines as are applicable.
  a. Title of Paper
  b. Objectives
  c. Perspective(s) or theoretical framework
  d. Methods, techniques, or brief literature review
  e. Data source (if appropriate)
  f. Results, conclusions, or point of view
  g. Educational/scientific importance of the study

  NOTE: Only the Title of the Paper should appear as identifying information at the top of the Summary. Please do not include name or institutional affiliation, in order to permit blind review.

- Abstract (3 copies). A 100–200 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the above guidelines for the 2–3 page Summary. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. Abstracts should be typed, single-spaced on 8½ x 11 paper. An abstract longer than 200 words will not be published. One copy of the Abstract should show the title and name(s) of the author(s) and their affiliated institution(s) typed at the top left margin of the page, in the format below:

  Title of Paper (Caps and lower case)
  AUTHOR(S) (ALL CAPS), Institutional affiliation(s) (Caps and lower case)

  Two copies should show Title of Paper, but no Name(s) or Institutional affiliation(s) in order to allow a blind review.

- Envelopes (3 self-addressed, stamped, business-size envelopes). These will be used to inform you of (1) the receipt of the proposal, (2) the reviewers' decision, and (3) the scheduled session time.

- Index Cards (three, 3 x 5 index cards). These should be prepared as follows:

  Title of Paper
  Name of presenting author (last name first)
  Institutional affiliation
  Complete address (with zip code)
  Telephone number (with area code)

- Three copies (8½ x 11) of a list of all author(s), including name(s), institutional affiliation(s), complete address(es), and telephone number(s).

IV. GUIDELINES FOR SYMPOSIUM PROPOSALS

A. General Information About Symposium Proposals

A Symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. In addition to allowing for informative discussion, a Symposium should provide for presentation of alternative solutions or interpretations either of a common problem or in relation to a complementary theme. This purpose is best served when individuals with diverse or conflicting views are allowed to interact on a topic of sufficient scope and importance. It should be noted that a Symposium should not be merely a presentation of a set of related papers. While such complementary papers are clearly worthwhile, they should be submitted as individual papers with an indication of suggested grouping on the Cover Sheet.

B. Responsibilities of Organizers of Symposium

It is the responsibility of the Symposium Organizer to suggest topics and solicit speakers and discussants. Organizers of symposia must have the consent of all participants before submitting the proposal. Organizers not wishing to chair the session must invite chairpersons. The Organizer of a symposium is responsible for ascertaining that each person

named as a participant will be present at the meeting if the session is accepted. Should unforeseen circumstances prevent a participant from attending, it is the responsibility of the Organizer to find a suitable replacement and notify all other participants in the session as well as the MWERA Annual Meeting Program Chair. It is expected that the discussant(s) and the participants have access to summaries of each presentation two weeks prior to the meeting so that they may be able to formulate their remarks in the context of what the others plan to say. Only the Organizer will be notified of acceptance of a Symposium, and she/he is responsible for notifying other participants in the Symposium.

C. Materials to be Submitted with a Symposium Proposal

- Symposium Proposal Cover Sheet (three copies). See attached form.

- Summary (3 copies of 3-5 page summary typed single-spaced on 8½ x 11 paper). The summary will be used in judging the merits of the proposal. It should contain as many of the following guidelines as are applicable.
  a. Title of Presentation
  b. Objectives of the symposium
  c. Educational or scientific importance
  d. For each presentation, include a one-page overview with:

     Title of presentation
     Objectives
     Perspectives and/or methods
     Data source (if appropriate)
     Results, conclusions, or point of view

  NOTE: Please do NOT show the Names or Institutional affiliations of the presenters on this Summary, in order to allow a blind review.

- Abstract (3 copies). A 300-400 word, narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should represent, in abbreviated form, the information contained in the 3-5 page Summary. Use clear, precise language and avoid abbreviations that might be confusing to readers unfamiliar with your field. Abstracts should be typed single-spaced on 8½ x 11 paper. An abstract longer than 400 words will not be published. Be sure that one copy has the following information at the top left margin of the page:

  Title of Symposium (Caps and lower case)
  ORGANIZER (ALL CAPS), Institutional affiliation (Caps and lower case)
  CHAIRPERSON (ALL CAPS), Institutional affiliation (Caps and lower case)
  PARTICIPANTS (ALL CAPS), Institutional affiliation (Caps and lower case)
  Two copies of the Abstract should NOT show any Name(s) or Institutional affiliation(s), in order to allow a blind review.

- Envelopes (3 self-addressed, stamped, business-size envelopes). These will be used to inform the Organizer of (1) receipt of the proposal, (2) the reviewers' decision, and (3) the scheduled session time.

- Index Cards (three, 3 x 5 index cards). These should be prepared as follows:

  Title of symposium
  Name of organizer (last name first)
  Institutional affiliation
  Complete address (with zip code)
  Telephone number (with area code)
  Name of symposium chairperson (last name first)
  Institutional affiliation
  Complete address (with zip code)
  Telephone number (with area code)

- Three copies (8½ x 11) of a list of all participants in the symposium, including their individual presentation title, names, institutional affiliations, complete addresses, and telephone numbers. The chairperson, discussant(s), and presenters should be included in this list, and identified as such.

V. GUIDELINES FOR TRAINING WORKSHOP PROPOSALS

A. General Information About Training Workshop Proposals
Workshop topics should be of interest and use to a number of MWERA members. Presenters will receive an honorarium based on the number of participants attending the workshop. All persons listed as presenters are required to appear at the conference and present the workshop at the designated time. All workshops will be on Wednesday, October 14, 1992, either starting at noon or 3:30 p.m. Some workshops may be offered twice. Workshop proposals should be sent to the Training Workshop Coordinator, Stephen Benton (see address on page 5).

B. Materials to be submitted with a Training Workshop Proposal

- Cover Sheet (Use Symposium Proposal Cover Sheet. See attached form.) Send two copies with all items complete. Strike out the word "Symposium" and write in "Workshop." Indicate the total amount of time you believe will be needed. Please note that in special circumstances a workshop may be allocated more than three hours.

- Summary (3 copies of a 2-3 page summary typed single-spaced on 8½ x 11 paper). This will be used to judge the proposal. The summary should include information such as the following.
  a. Objectives (knowledge, skills for participants)
  b. Suggested entry-level skills for participants
  c. Educational or scientific importance of the topic
  d. Perspectives, orientations, or theoretical framework
  e. Methods or techniques of instruction
  f. Description of presenter's relevant experience

- Abstract (3 copies). A 100-200 word, narrative Abstract should be prepared for publication in the Annual Meeting Abstracts. This should briefly describe the objectives, content, and methods of the workshop. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. Abstracts should be typed single-spaced on 8½ x 11 paper. An abstract longer than 200 words will not be published. For all copies of the abstract, the title of the workshop, the presenter(s), and their institutional affiliation(s) should be typed at the top left margin, in the format below:

  Title of Workshop (Caps and lower case)
  PRESENTER(S) (ALL CAPS), Institutional affiliation (Caps and lower case)

- Envelopes (3 self-addressed, stamped, business-size envelopes). These will be used to inform you of (1)

receipt of the proposal, (2) the reviewers' decision, and (3) the scheduled session time.

- Index Cards (three, 3 x 5 index cards). These should be prepared as follows:

  Title of Workshop
  Name(s) of Workshop presenters (last name first), identify contact person
  Institutional affiliation
  Complete address (with zip code) of contact person
  Telephone number (with area code) of contact person

Mail Workshop Proposal to 1992 Workshop Training Coordinator: Stephen L. Benton, Department of Educational Psychology and Counseling, Bluemont Hall, Kansas State University, Manhattan, KS 66506. Proposals must be postmarked first-class by **May 15, 1992**.

VI. ADDITIONAL INNOVATIVE FORMATS ARE INVITED

Session formats for the Annual Meeting are not necessarily limited to those listed above (i.e., papers, symposia, and workshops). Innovative formats (e.g. poster sessions or roundtables) are encouraged and will be considered. If you wish to propose an innovative format, please submit details by **May 15** to the 1992 Annual Meeting Program Chair, Richard C. Pugh, School of Education, Indiana University, Bloomington, IN 47405.

VII. MWERA/WERA STUDENT RESEARCH INCENTIVE AWARDS

Up to 3 awards will be presented during the MWERA Business Meeting on October 16. Any graduate student who has authored/co-authored a research paper, is pre-registered for the 1992 Annual Meeting, and is present at the MWERA Business Meeting will qualify for an award. Recipients will be selected by a random drawing at the Business Meeting. No application procedure is required.

VIII. WHERE TO SUBMIT PROPOSALS

Proposals for PAPERS and SYMPOSIA are to be submitted with a first-class postmark of no later than **May 15, 1992**, to one of the following Division Chairs. Choose the Division that most appropriately reflects the topic of your paper/symposium.

DIVISION A: ADMINISTRATION—Concerned with research, theory, development, and improvement of practice in the organization and administration of education.
Dr. William L. Sharp
Dept. of Ed. Admin. & Higher Ed.
Southern Illinois University
Carbondale, IL 62901-4606 Phone: 618-536-4434

DIVISION B: CURRICULUM AND STUDIES— Concerned with curriculum and instructional practice, theory, and research.
Dr. Sarah E. Peterson
Educ. Psych., Couns. and Spl. Educ.
Northern Illinois University
Dekalb, IL 60115 Phone: 815-753-8471

DIVISION C: LEARNING AND COGNITION— Concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors.
Dr. Gregory Schraw
1313 Seaton Hall, Educational Psychology
University of Nebraska
Lincoln, NE 68588 Phone: 402-472-3081

DIVISION D: MEASUREMENT AND RESEARCH METHODOLOGY—Concerned with measurement, statistical methods, and research design applied to educational research.
Dr. Ralph O. Mueller
Snyder Memorial Building, Dept. of Educational Research
The University of Toledo
Toledo, OH 43606 Phone: 419-537-4722

DIVISION E: COUNSELING, HUMAN DEVELOPMENT AND SPECIAL EDUCATION— Concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies.
Dr. Thomas E. Midgette
136 Graduate Education Bldg.
University of Arkansas
Fayetteville, AR 72701 Phone: 501-575-3509

DIVISION F: HISTORY AND PHILOSOPHY OF EDUCATION—Concerned with the findings and methodologies of historical research in education.
Dr. Fred W. Buddy
350 Spelman Lane, SW
Spelman College
Atlanta, GA 30310 Phone: 404-981-5559

DIVISION G: SOCIAL CONTEXT OF EDUCATION AND MOTIVATION—Concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development.
Dr. Mary R. Sudzina
Dept. of Teacher Education
University of Dayton
Dayton, OH 45469-0525 Phone: 513-229-3389

DIVISION H: SCHOOL AND PROGRAM EVALUATION—Concerned with research and evaluation to improve school practice, including program planning and implementation.
Dr. Gary Shank
Educ. Psych., Couns. and Spl. Educ.
Northern Illinois University
DeKalb, IL 60115 Phone: 815-753-8448

DIVISION I: PROFESSIONAL AND MEDICAL EDUCATION—Concerned with educational practice, research, and evaluation in the professions (e.g., medicine, nursing, public health, business, law, and engineering).
Dr. Gene A. Kramer
American Dental Association
211 East Chicago Avenue
Chicago, IL 60611-2678 Phone: 312-440-2684

DIVISION J: POSTSECONDARY EDUCATION— Concerned with a broad range of issues related to two-year, five-year, and graduate education.
Dr. William E. Loadman
287 Arps Hall
The Ohio State University
Columbus, OH 43210 Phone: 614-292-3239

DIVISION K: TEACHING AND TEACHER EDUCATION—Concerned with research on teaching, conditions of teaching, the teaching profession, and the preparation and development of teachers.
Dr. Donald L. Haefele
287 Arps Hall
The Ohio State University
Columbus, OH 43210 Phone: 614-292-3239

PAPER PROPOSAL COVER SHEET

1992 MWERA Annual Meeting

Please print or type

1. Title _____

_____

2. Presenting Author _____
LAST NAME FIRST NAME MI

Affiliation _____ Telephone ( )

Complete address _____

3. Authors. Please check here if there is more than one author for the paper. ☐
Please attach a separate sheet listing name, institutional affiliation, complete address, and telephone number for each author. Include and identify the presenting author. (Please print or type this information.)

4. If you wish to have this paper grouped in the same session with other papers submitted to the Annual Meeting, please attach a separate sheet listing paper titles, presenting authors, and institutional affiliations.

5. Are you a member of MWERA? ☐ Yes ☐ No

Please note that all presenters must be current members of MWERA at time of presentation and must pay registration for the Annual Meeting.

I hereby certify that, if this paper is accepted and placed on the program, I will register for the Annual Meeting, appear, and deliver the paper.

_____
SIGNATURE DATE

Be certain all of the following are enclosed:

THREE SETS OF MATERIALS, STAPLED TOGETHER, EACH CONTAINING ONE OF EACH OF THE FOLLOWING:

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Culture, Style, and Equity in Education:

An Interview with Asa Hilliard

By E. Jean Harper
Dayton Public Schools

Asa Hilliard, Ph.D., Fuller E. Callaway Professor, Department of Educational Foundations, Georgia State University, Atlanta, Georgia. Dr. Hilliard is a psychologist, historian and educator. He is the author of numerous articles and books focusing on the needs of African-Americans.

Q **You have stated that the learning styles of African-American children are often misunderstood by American educators. This misunderstanding leads to unrealistic expectations and the miseducation of African-American children. Could you elaborate on this point.?**

A There are three issues that need to be explored relative to the learning styles of African-American children. First, there is a question as to whether there is any reality to cultural style. Are African-Americans unique in any behavioral way? There is a data base that overwhelmingly shows that African-Americans have something special. Some chose not to consider this data base and disagree philosophically. For example, some liberal types refuse to acknowledge differences. They just want happiness all over the world. To them, difference is threatening. Though all people are fundamentally the same, if they spend a great deal of time together, they tend to act alike. They share a common core culture.

The second issue in style is racial. Empirically we can prove that some people have a habitual way of approaching situations, but it does not have anything to do with biology. If you have a country that is organized politically around race, you will have created a culture that is different from the culture of another race. They will develop patterns that are distinctive because they are socialized together. The general category is race and the subtopic is cognitive; and you can spot those different modes of functioning. This does not mean that everyone that is Black is going to act like everyone else who is Black. It does mean that there is a majority who will behave in similar ways and who will be identifiable, culturally, because of their race.

Business people know that when they are trying to sell something to an African-American audience, the promotion is different than when they try to sell to a white audience. For example if they play country and western music, they probably will not attract a black audience. Business has no problem "segmenting" the market. They know what appeals to African-Americans, what appeals to Hispanics, and what appeals to European Americans. As a result, they tailor their approach to those constituencies. Educators, on the other hand, because we are not profit driven, have not responded inkind.

Third, although style is correlated with race due to economic and political factors, is it pedagogically meaningful? Educators might want to design pedagogy based upon what we know about the styles of African-American students.

Q **What are some elements of the African-American style?**

A A. Improvisation versus preconception. African-Americans prefer to have a pattern, but yet there is a need to have the freedom to vary within the performance of the pattern. An example of that is improvisational jazz. Preconception, rather than improvisation is more typical of the European style. You have polar opposites in terms of the rules for creative development. It is also clear that since Europeans and Africans have been occupying the same space, there is a great deal of crossover. Dance, is another example. Europeans tend to preconceive all of

(continued on page 24)

their moves and execute their plans. Though that's an example of dance, the same is true of teaching. Style is so generic and fundamental. Style manifests itself in many areas, such as language. To say that there is no difference in style, one would have to be totally blind and incapable of identifying differences. Style is learned, if you can learn one style, then you can learn another. You may not want to adopt the other style, but you can learn it. The big issue is whether the existing style in education can be enhanced by using alternative styles. I believe this will improve the overall learning environment of all children, not just African-American children.

Q **Are there other ways that cultural style manifests itself?**

A The tendency to fragment things whether it's global or elemental. Europeans tend to take things apart and analyze through a linear method. Africans tend to put things together and view things in a wholistic method. Africans also tend to be more person-oriented. Interpersonal aspects are not as important to whites as the features of the situation. However, interpersonal qualities are very important to Blacks. It can be seen in humor. A stand-up comedian in the traditional sense makes humor by a play on words; contrast that with Richard Pryor who bonds with the audience and uses the feelings of the audience. The words are rather secondary. If you simply wrote down what Richard Pryor said in a book, the words probably would not be funny.

Q **You have written that school systems have been oppressive and inequitable to African-American children. How?**

A Primarily due to the culture. If you have apartheid in the general society, then there will also be apartheid in the schools. A recent survey conducted by the University of Chicago and Johns Hopkins University found that over 50 percent of those interviewed believe Blacks are inferior to Whites. If this is also true for the White psychologists and White teachers, then this belief has significant implications and heavily impacts the classroom. This belief will manifest itself into negative behavior that would be harmful to children. The inequity in the general culture manifests itself in the schools. If there is a class system outside of the school, there will be one in the school. We need more than pedagogical change, we also need political change.

Q **How can schools become more democratic?**

A By creating an educational environment in which elitism is minimized, an environment in which children will receive the same services independent of their income. One where teachers are attuned to the culture of the students so that students do not feel alienated. An environment that demonstrates respect for the creative and critical capacity of children. Race and income are not variables in a democratic environment. Democratic schools are equitable. Equity is making the opportunity to receive what you need to get an outcome. If a student needs a wheelchair, you don't need to buy a wheelchair for everyone. Democratic schools value cultural democracy rather than cultural simulation. Some are fearful of the ethnic identity of certain groups, such as the African-Americans and Hispanics. Some want to wipe out of all ethnic groups. Democratic schools do not *require* that one melts, but gives one the *choice*.

Q **Do you believe that today's educators are culturally retarded?**

A Yes. A culturally retarded person is one who sees no differences, yet the differences are there. It is a fear of differences that makes one not perceive the differences. The culturally retarded person does not have the ability to see and detect differences. The differences, ex post facto, create inequity. Teachers are socialized into one cultural group. Therefore when they meet those from other cultures, they do not know how to interact and react. Minority groups are forced to be skillful in maneuvering two or more cultures. Educators need to be become culturally sophisticated to be able to deal skillfully with those of different cultures. For example, a culturally sensitive teacher would realize that English is only one variety of language, it is not language.

Q **What is the role of the professor in preparing teachers to be more culturally sophisticated?**

A Higher education professors must do their homework, have pluralistic preparation and be able to refer them to literature, suggest effective practices and engage them in dialogue that will assist them in becoming culturally sophisticated. Higher education professors must ensure that African-Americans and other minorities are not excluded from their research teams and that cross-cultural research is interpreted and used properly. Professors must also be certain to include cross-cultural publications in their syllabi.

An Interview with Hilliard *(continued)*

Q **Do you favor or oppose the current student testing movement?**

A Oppose. The testing movement is mostly useless. Achievement tests have problems, but these problems can be fixed. IQ tests have problems, and the problems cannot be fixed. IQ tests make no contribution to improving educational practice and generally tend to harm it. Therefore, IQ tests should be eliminated. Achievement testing is a must and it can be improved. We can discuss whether the test should be essay, multiple choice, observation or portfolio assessment, but I'm more interested in equity. Equity is very important. My goal is to help eliminate tests that hurt African-American students, and to improve the quality of the achievement test, which is necessary to determine academic growth.

Q **In your view, how valuable are teacher competency tests.**

A Worthless. It is not worthless to assess teachers. Assessment is a part of all education in all sciences. Teacher competency testing is usually a test of basic skills and a number of other competencies unrelated to that which has proven to be successful in the classroom. If I wanted to know how good you were as a teacher, then I would observe you and relate that to how good you are in the classroom. I am not going to criticize your tactics if you can demonstrate that students are learning. However, if you perform in a way that is considered to be perfect pedagogy but kids are not learning, then your score on the teacher competency exam is of little consequence. It has been empirically proven that teacher tests and the work of teachers in the classroom, are unrelated.

Q **When do tests become hurdles for teachers.**

A When the test prevents professionals from advancing. Also, when the test used is unrelated to student achievement or improvement of teacher preparation.

Q **What prerequisites are required for teachers to become competent?**

A The quality of relationship (personality attributes and communication) and academic preparation (content). I am not convinced that it is a skill issue that will enable teachers to teach. It is the attitude of the teacher that will determine the quality of the teaching that takes place in the classroom and the level of student achievement.

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Multicultural Considerations in Assessment

By Lori A. Spadafore, Ball State University

One of the trademarks of American public education has been to expand and change the curriculum in such a manner that the educational needs and differences of all children are met. It is unfortunate, however, that this expansion has failed to recognize the sometimes subtle, but always important, differences involving ethnicity and culture. It is perhaps these differences among children that are accountable for the alarming number of minority children enrolled in special education programs throughout the United States. In a recent report by Bowman (1988), researchers found that Blacks and Hispanics were twice as likely as Whites to be referred for special education assessments.

Such findings suggest that minority children may be overrepresented in special education. Although the assessment of these students' abilities may be reliable, they may also be influenced by cultural biases in testing and interpretation. There are certain precautions that may be taken on the part of the school psychologist or other professionals involved in evaluation to ensure that ethnic cultural biases are minimized.

As with any culturally sensitive situation, certain key concepts must first be understood. These concepts include *culture, ethnicity, minority group,* and *acculturation* (Nuttal, DeLeon, & Valle, 1990). Culture may be understood as a way of life; the total of a group's way of acting, thinking and feeling, involving components such as behaviors or customs, artifacts, beliefs, symbols, and values (Birkel, 1991). The term ethnicity refers to the patterns of values, social customs, perceptions, behavioral roles, language usage, and social interaction shared by the group (Rotheram & Phinney, 1980). A minority group may be defined as a group of people who are singled out from other groups of society because of differing physical and cultural characteristics (Atkinson, Morten, & Sue, 1989). Finally, when changes in the original culture meet with different cultures, adaptation, rejection or acceptance may occur. This process of adjustment is known as acculturation (Lewis & Ho, 1983).

Aside from understanding the previous concepts, professionals serving culturally different populations must also develop competencies in the areas regarding attitudes, knowledge, and behavior (Nuttall, DeLeon, & Valle, 1990). First and foremost, it is important that professionals be aware of their own ethnic roots and cultural backgrounds, and their attitudes toward children and families from different ethnic groups. If school psychologists are to effectively serve children of different ethnic groups, they should respect and be comfortable with their dissimilarities. Efforts can be made in several ways to develop sensitivity and understanding in working with minority children: learning the language of the particular group, taking courses in cross-cultural counseling, visiting the home country of the ethnic group, or reading about the different ethnic groups (Nuttal, DeLeon, & Valle, 1990). In the event a professional cannot develop competencies and adopt positive attitudes, referral to another professional would be most ethical.

Competency in the areas of knowledge and behavior characteristics of an ethnic group involves an awareness of the history, customs, beliefs and values of that group. In some Native American cultures, for example, a child asked to draw a picture of a person may not draw the eyes open or filled. According to interpretation standards, this may be a sign of maladjustment, indicating depression or dependency. According to the same Native American culture, however, this is a sign of respect. Familiarity with family and social structures, school issues, medical practices, and religious holidays is also strongly recommended. In addition, learning styles, goals and expectations, and existing knowledge bases and schemas must be considered within the context of each child and his culture. This information should then be carefully and thoroughly disseminated to the relevant educational and school staff.

Once it has been determined that a professional is able to serve an ethnically different child effectively and competently, Nuttall, DeLeon, and Valle (1990) offer several strategies that may be helpful in conducting ethically and ethnically sound evaluations and practice:

School psychologists should:

1. Take an active, flexible, problem-solving approach when helping minority students;
2. Advocate for the rights of minority children;
3. Act as consultants and in-service training providers for school staff if they have the special skills needed for dealing with minority children;
4. Help minority parents to learn about U.S. mainstream culture and school programs, especially those for the handicapped.
5. Help the community and mainstream parents to welcome parents and children from minority groups.

These strategies are not only applicable to school psychologists and other school personnel, but any professionals working with children of differing cultural backgrounds.

In summary, there are several precautions that must be taken while working with children of any ethnicity. Special precautions also exist for children of differing or minority cultural backgrounds, particularly in the realm of psychoeducational evaluations and special education placement. In general, awareness of cultural differences in attitudes, behaviors, values and beliefs, and customs and practices, is a precursor to any competent evaluation or professional interaction among culturally differing persons.

(continued on page 34)

African-American Male Academies from a School-Choice Perspective

By Thomas E. Midgette, University of Arkansas-Fayetteville

Abstract

The African-American male has been declared an endangered species (Gibbs, 1984, 1988). In an attempt to reduce the African-Amerian male being at-risk, some educators have advocated for the development of Black academies for males only as a method of intervention. This article critically examines the African-American Male Academy from a school-choice perspective. Assessment and research implications are also discussed.

Many cities and states have developed alternative schools for adolescents who are unable to progress in the regular school system (Tobias, 1989). Many of those students have dropped out, been held back repeatedly, have had problems with the law, have become teen parents, discouraged to learn and for other reasons find it difficult to fit into a traditional high school. The African-American Male Academy could be viewed as a preventative and choice-alternative school for African-American males to foster academic achievement. After all, in a final report the National Commission on Children (1991) recommended that all schools and communities design creative initiatives to help children with serious and multiple needs reach their academic potential. The premise is a clear one, the African-American male is at extreme risk in regular schools not sensitive to his needs. These students are almost destined to fail given past results, and thus extreme measures must be taken to save these endangered children. The African-American Male Academy is one of many possible strategies to restructure and improve schools and should be undertaken only after appropriate planning and accountability measures have been established to teach these students effectively.

African-American males need early, consistent and comprehensive instruction to engage them in learning, encourage them to excel and help them overcome circumstances that jeopardize their prospects for learning and growing (National Commission on Children, 1991). These academies could be a component of President Bush's "America 2000" Education Plan which calls for 535 "New American Schools" to be developed in communities around the nation. Critics of this national educational plan call for policies that end the savage inequalities of educational opportunity for the African-American youth (Owens, 1991; Watson, 1991). The African-American Male Academy could serve to increase the educational opportunities for African-American male youth in appropriate school districts.

Clearly the development of African-American Male Academies is directly in line with the President's National Education Goals. For the first time in federal legislation there is a trend toward strengthening provisions that target resources for those most in need (LeTendre, 1991). In addition, Congress and the Department of Education recognizing that schools are controlled locally and need for pedagogical flexibility have left schools with considerable discretion in how to best serve their children. LeTendre suggests that local school districts can specify the setting for services, length of time for delivery of instruction, kind of personnel who must provide it, content or skills to be learned, and instructional materials to be used. Schools can experiment with varying pedagogies and academic services from school to school or from grade to grade. We must place African-American males in schools which focus on their strengths, use more flexible teaching methods, and focus earlier on advanced skills and programs/curriculum which are culturally relevant in a holistic sense.

Historically in the United States many strategies for educating children at-risk have been tried; the African-American Male Academy represents another valiant approach. Social scientists, educators, social critics and politicians are constantly on the lookout for new directions to test, as the press to educate the disadvantaged becomes more apparent (Natriello, McDill & Pallas, 1990). Three of the most prominent approaches currently in vogue are: (a) school choice; (b) raising standards for performance; and (c) establishment of African-American Male Academies. The African-American Academy can be viewed as a combination of school choice and raising standards approaches. It represents a deliberate thrust in facilitating the education of inner-city children confronted with staggering at-risk conditions in the classroom, at home, and in their communities. As President Bush indicated to the Associated Press (Arkansas Gazette, 1991) "if our experiences show us that we need to get modifications to accommodate academies of that nature, we ought to do it." Our experiences have clearly indicated that too many public schools are not educating all of our chidlren—especially the African-American male child.

The establishment of African-American Male Academies is a necessary and proactive approach in increasing the probability that the young, African-American male will have equal access to educational opportunities needed for "normal" citizenship in this country. The appearance of these academies simply reflects an attempt at better meeting the critical needs of a segment of our society—the African-American male and family.

(continued on page 28)

African-American Male Academies *(continued)*

Some of the identified advantages of the African-American male academies include the following:

1. The African-American Male Academy advocate excellence, have high expectations of its pupils and promote the total development of the African-American male.
2. These schools exhibit African-American leadership by employing African-American male teachers and thus empowering students and communities.
3. These schools provide enriching and more relevant curricula for existence in a global and multicultural world.
4. These schools foster positive self-concept and esteem development by offering a supportive environment with mentors and role models who provide encouragement and inspiration.
5. These schools foster parental involvement in programs and overall involvement in school activities. They foster innovative and assertive strategies to intervene and stop the demise of the African-American family.
6. These schools can foster academic achievement and facilitate growth in mathematics, computer science, language arts and other areas beyond sports and music (Kunjufu, 1988).
7. They promote African-American volunteerism and self-help.
8. They serve to expand the pool of African-American male students graduating from high school and going to vocational schools, college and professional schools.
9. They can teach African-American males responsibility, self-love, and appreciation of human existence solely from an African-American male perspective.

The African-American Male Academy emanates directly from the African-American community in an anguished expression of collective caring for its young (Cuban, 1991). This alternative approach is not unlike some public schools, private schools, churches, youth organizations and communal groups. Community activists say African-American boys can find self-esteem and character to survive the street's lure of fast money and general discouragement in their environments. The African-American Male Academy becomes the institution of last resort, where peoplehood and personal self-confidence can be built rung-by-rung into a ladder for each boy to climb proudly and reach the kind of success that will bring pride to himself, his family and his race (Cuban, 1991).

Dramatizing the need for community involvement by African-Americans, Dr. Spencer Holland, an educational psychologist and director of the Center for Educating African-American Males at Morgan State University, stated, "What we have learned in the past 20 years is that White people don't care anything about educating Black children" (Holland, 1991, p. 20). He suggests that the African-American community has more of a stake in educating and socializing their children. If changes are to come about, Black male role models must be used to teach Black males from urban and impoverished neighborhoods. Some critics believe that these schools will perpetuate segregation and sexist thinking. Kunjufu (1991) counters by informing us that Black boys already are in classes by themselves—special education classes. Often these same Black boys are subject to subtle rejection by teachers because they are perceived as threatening and therefore receive less instructional attention (Poussaint, 1987).

Owens (1991) argues that the solution to the minority education crisis will not be found until the educational research base is enhanced. Therefore he calls for an approach which delivers effective services to the African-American males and must be based on systematic, empirically grounded research and scientifically evaluated demonstration projects.

> "The race between education and catastrophe is now upon us. To fail to successfully educate yet another generation of African-American males means that we not only continue to foreclose opportunities for individual lives, but we continue to pay for our failure over and over again in unnecessary social costs. We cannot afford to lose" (Owens, 1990, p. 10).

The African-American Male Academy is consistent with American 2000 Education Plan and a worthy choice strategy for African-American communities and society at large. Ideally and only as a tandem influence, combined with new strategies can we make an impact on the forgotten African-American youth (Turning Points, 1989). Schools must stop exacerbating the African-American child's problems and become involved in innovative programs to educate the young African-American male. After four of five years all of these academies must be assessed based on outcome and process measures.

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(continued on page 36)

Does Direct Experience Change Education Students' Perceptions of Low-Income Minority Children

Martin Haberman and Linda Post
University of Wisconsin-Milwaukee

Abstract

It has become accepted practice in teacher education to regard direct experience as the ultimate educative force. Whether the goal is to help students derive meaning from their coursework, practice theoretic concepts, or change their attitudes, the practice of placing future teachers in some sort of direct experience with children and youth is generally regarded as an all-purpose elixir. This study supports the contention that such experiences simply reinforce students' predispositions.

Direct experiences have been elevated to the level of an accepted good and as a result are studied much less than should be. We set out to specifically examine the assumption that providing undergraduate preservice students with direct experience would make them more sensitive to minority cultures and low-income children.

Teacher race is an issue because of teachers who display overt prejudice toward children of color, expect less of them than they do of White children, or fail to understand them (Irvine, 1991; Simpson & Erickson, 1983). Race and class are frequently used to explain the culture gap between school and community (Metz, 1990; Tewell & Trubowitz, 1987). The solution proposed by some is to recruit more teachers of color (Contreras & Engelhardt, 1991; Haberman, 1989; Justiz & Kameen, 1988). But many educators focus on the process of teacher education itself, pointing to the need to influence White teachers' expectations of low-income students and students of color. They advocate teaching future teachers strategies for multicultural teaching (Lee, 1989; Liston & Zeichner, 1990; Shor, 1986). Many educators conceptualize this task as helping future teachers "unlearn" negative attitudes and develop positive ones about race and various ethnic groups. Sleeter (1992a) shows that the task is more complex. Many White women are trying to work themselves up from working class origins and already have considerable knowledge about social stratification in America. They also tend to be fairly conservative. Apparently, they integrate information about race provided in multicultural teacher education programs into the knowledge they already have, rather than reconstruct that knowledge.

"Educating" White teachers in teacher-education programs to be less racist and classist assumes that it is essentially a rational phenomenon. But many have shown "that racist attitudes are very rarely rational. Even in those cases where the attitudes are regarded as rational, they are not considered to be in the interests of the person expressing them" (Wellman, 1977, p. 14). In a two-year study of teachers' social class and gender perceptions, participants fit new experiences and ideas into their existing constructs (Sleeter, 1992b).

This study sought to learn more about the reasonableness of expecting teacher education programs to change future teachers' perceptions of low-income minority children and their schooling.

Methods

The subjects were a group of 23 white, female sophomores from teacher-preparing institutions throughout the state of Wisconsin. With the exception of two "older" students, all were between the ages of 19 and 25. These were self-selected individuals who volunteered six weeks of half-day participation in public elementary schools operated in Milwaukee as a remedial summer session. Their involvement included a minimum of 100 hours of direct experience with low-income, minority children, and afternoon class sessions focused on concepts and issues in multicultural education.

At the beginning of the experience we asked the students to write what they *expected* to encounter in these urban classrooms under 11 headings: discipline, methods, children's backgrounds, personal interaction, personal qualities, classrooms, students' characteristics, parents, neighborhood, students' behavior, and cultural diversity. At the end of the six-week period we asked the students to write what they actually experienced in terms of these same 11 categories. We then made a content analysis of their before and after statements.

The activities the students engaged in began with a week of observation and tutoring of individual children. The majority of their subsequent involvement was more characteristic of a student-teaching experience. While they did not write lesson plans, take methods courses, or have supervisory visits, they engaged in a wide range of instructional activities that are typical

(continued on page 30)

of the student-teaching experience. These students were treated very informally and were visited by supervisors for the primary purpose of ensuring that they were *interacting* with children in positive ways. Nevertheless, their most common interaction with children was some form of teaching, including the teaching of whole classes.

The afternoon classes in support of these direct experiences focused on multicultural curriculum and instruction. The format included the use of lecture-discussion, resource speakers, readings, cooperative activities, videos and instructional games. There were no individual conferences for the purpose of checking or clarifying students' perceptions. Perceptions, attitudes and beliefs related to students, direct experiences were discussed in the total group or with smaller groups. Students were given content on sexism, racism, child abuse, poverty, drug and sex education, and the teaching of those with handicapping conditions. The purpose of this supportive coursework was to build on their direct experiences in the mornings and to sensitize them to the need for equity and justice in the teaching of all children.

Results

Comparison results of students' initial expectations before beginning the experience and their final evaluations of what they actually saw (see Table 1). These perceptions relate to children, parents, neighborhoods, school behavior and culture.

Final interviews revealed that although the majority of the students made more negative attributions about pupils at the end of their experience than at the beginning, they were clearly very accepting of the pupils. It seemed as if they gained confidence in their ability to interact effectively with the children; they clearly gained in self-confidence. As they gained in self-confidence, it became easier for them to discuss their own negative qualities as well as those of the children. There is no question that these students transformed their initial apprehensions into experiences which provided them with reassurance. From "I'm still alive!" to "Hey, they accept me!" to "I can do some actual teaching!" to "I think some of these kids like me" seems to have been a typical sequence culminating in several students claiming, "This was a wonderful, great experience!"

This is not to contend that students' perceptions of children were necessarily changed. The major finding of this study supports the remarkable phenomenon of students generally using these direct experiences to selectively perceive and reinforce their initial preconceptions. Students who expected to find problems did so. Those who thought they could practice instructional methods did so. Those who thought there would be discipline problems found them. The notable exception to this pattern was the lack of parental contact which the students did not foresee and the generally positive acceptance by the children which, in many cases, was almost overwhelming. Since there was limited time to debrief and consult in-depth with students regarding what they thought they were actually observing, seeing, and hearing, the experience tended to reinforce their initial perceptions more than to change them.

Table 1

Sophomore Education Students' Expectations and Perceptions Before and After a Direct Experience with Low-Income Minority Children.

Expectations	Frequency
Some will be shy and quiet, others loud	Some were disruptive. Some were cooperative.
Neighborhoods will be nice	Nice neighborhoods.
Rundown neighborhoods	Neighborhoods were rundown.
Will learn about different cultures	Learned much about different cultures.
Parents will be interested in how well their kids are doing	Parents wanted to see work and grades.
Students will be energetic, curious, troubled	Wonderful kids, some angry, lacked confidence.
More diversity	This was much more varied than my rural experience.
I'll see behind scenes	Learned how teachers set up and managed things.
More discipline problems, more remedial problems	Lower standards.
Learn how to discipline	Learned some discipline strategies.
I will learn how children are and act	I learned about their characteristics and behavior.
Neighborhoods will be tough to survive in	Neighborhoods were nice on top but worse the further down you went.
I will see many different personalities	I learned about different students.
They will be eager and well-behaved.	They behaved very well.
I'll learn how to handle 20 to 30 students	I learned how to manage a large group.
I expect it will be hard to keep them interested	It was long, hard and stressful.
Kids won't want to be there	Tough on warm days.
All types of students	Each has strengths and weaknesses.
Like any other classroom	Kids are kids.
I'll learn how to handle disrespect	I gained children's respect.

Discussion

Without in-depth conferences, discussions, and debriefings of each student's direct experiences, his/her perceptions will be self-fulfilling. Positive predispositions will be reinforced through selective perception. Similarly, negative preconceptions will be supported. Comparing each student's before and after comments supports this dynamic as the major finding.

Concerns with student discipline remain constant and high. There is an increase, however, in confidence in dealing with this issue. Education students shift from tentativeness, fear, and anxiety about children to a greater degree of confidence, based in largest part, on the fact that pupils accepted and responded to them as teachers.

Direct Experience *(continued)*

Education students shift from focusing on children's differences to an appreciation of the problems they face and their strengths. While students' describe pupils with more negative descriptors at the end, they are generally more negative about all areas in which they need to grow as teachers. There was clearly movement toward greater understanding of pupils.

Perceptions of classroom atmosphere and physical space changed from a fixed given to something that teachers can control through room decoration and changing setups.

Education students' initial anticipation of parental contact was the area of greatest change. At the end, students realized they would not be able to learn about parents' or pupils' lives through these meetings since there would be little contact with parents, and that when it did occur, the meetings would focus almost entirely on parents' concern with achievement gains.

The positive feelings education students manifested at the end of the experience seems to reflect an increase in self-confidence. They are, however, still grappling with many unresolved issues. Only one student would say she wanted to teach in an urban school; most were still at the prior level of seeking and gaining reassurance that they made the right decision about becoming teachers. Another unresolved issue was their understanding of cultural diversity and just how important these differences are in affecting learning and behavior. The belief that "kids are kids!" and that only individual differences rather than cultural differences are of any consequence, was generally reinforced by these experiences. Hands-on knowledge of how cultural diversity affects a classroom was not developed.

Implications

Direct experiences are not necessarily educative. Faculty and preservice students frequently confuse the intensity of direct experiences with growth. It would be naive to assume that the process of placing students in low-income, multicultural urban classrooms is, by itself, necessarily positive. Confirming invalid perceptions are just as likely an outcome as greater sensitivity and awareness.

Follow-up studies need to focus on treatments used by teacher educators to intervene and directly influence students' perceptions. These treatments may include, but not be limited to, continuous, frequent, in-depth dialogues with students regarding what they believe they are observing and the attributions they make related to their observations. This treatment will inevitably require a teacher education faculty that is more multicultural than is currently typical, as well as more than 100 hours of direct experience for the students.

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Book Review:
Postmodernism and the New Politics of Education

A review of: Giroux, H. (1992). *Border crossings: Cultural workers and the politics of education*. New York: Routledge.

Reviewed by: Dennis Carlson, Miami University.

Border Crossings is a collection of essays written by Henry Giroux over the past several years, portions of which have been published elsewhere in a different form. However, the essays all are organized around common themes and share a common language, so that the book reads as a unified whole rather than a collection of disparate essays; and it is to the book as a whole that I will direct my comments. In my view this is one of the most important books in critical educational and cultural studies to be published in over a decade, and it deserves serious attention by all educational researchers and scholars. Its intent is no less than a remapping of the discursive terrain of pedagogy and the educational act, and to do this it calls into question many of the constructs and ideas we have taken for granted in conducting educational research, the questions we have chosen to raise in our research, the boundaries we have erected around constructs and categories, and the power dynamics within which research is intextricably embedded. Beyond this, *Border Crossings* is aimed at a revitalization of democratic and progressive discourse in education and the broader society, a discourse that for several decades now has languished in a pessimism and determinism that, through its failure to develop a politics of possibility and engagment, has not seriously challenged the conservative state discourse on school reform and the nature of social problems.

By crossing conceptual and paradigmatic borders, Giroux provides a new direction for critical educational research that moves beyond the deterministic and functionalistic tendencies of the neo-marxist reproduction theory that dominated the field during the 1970s and much of the 1980s. To accomplish this he draws heavily upon the new postmodern discourses in the social sciences, humanities, and the arts. At the same time, Giroux remains committed to the concerns that have been central in his writing over the past two decades, that is: social justice, the democratic project, and the possibility of articulating a public philosophy. He also is well aware of the current role of the public schools in generally serving to reproduce inequalities of class, gender, and race, so that he does not fall victim to a naive belief that nothing fundamentally stands in the way of a reconstruction of curriculum and pedagogy in public schools that empowers marginalized and disadvantaged groups. Change in education, he argues, cannot be treated separately from change in the power relations and dynamics that organize everyday life in American culture, and this implies that educators must be "cultural workers" as well. He then sets out to characterize critical cultural work in terms of a "politics of difference" that is based on a radical rethinking of multiculturalism.

To begin to talk about cultural workers, a politics of difference, and multiculturalism —as Giroux characterizes them—we must first confront the language and worldview of postmodernism, which provides a deep structure for this text. Postmodernism is among the most illusive of contemporary theoretical movements, but among other things it implies: a shift to a post-industrial and information processing age, the rise in influence of the mass media in identity construction, the rejection of "grand narratives" and forms of rationality that hold out the promise of providing totalizing or complete answers, and a recognition that power, knowledge, and desire are inextricably interconnected. Giroux's point is that we may be moving into a postmodern age, one characterized by an "unsettling" of what appeared socially and theoretically settled. The network of interlocking "settlements" or "accords" that characterized the post World War II era—from the labor-business accord forged during the depression and represented in collective bargaining, to the Civil Rights accord forged between 1954 and 1964, to the gender accord organized around the patriarchal nuclear family, to the social science accord that has privileged positivist research methodologies borrowed from the natural sciences. These settlements have always been contested to at least some degree, but in the 1990s they show signs of breaking apart, producing economic, social, and political crisis. This suggests that the 1990s may be much more like the 1960s than the 1980s. Postmodernism is a manifestation of this growing discord and dissensus in Western culture, and it has slowly begun to open up important space for oppositional discourse in education and other disciplines.

Postmodernism in the academy also is a manifestation of a growing dissensus and dissatisfaction over the dominant modernist form of scientific rationality that decontextualizes the analysis of the social world, how it gets constructed, and whose interests it serves. This has been and still is the positivist century—the century that sought to "manage" society and individuals based on the findings of social science and psychological research, and in public education that sought to identify the attributes of "effective" teaching, instructional organization,

and school management and identity and remediate the cultural and functional literacy "deficits" of targeted student groups. Scientism and technical rationality have been used to legitimate this professional discorse on the proper management of educational "problems," and Giroux reveals that it is a discourse that has been disastrous educationally, at least for those marginalized and disadvantaged in the schooling process. It is not coincidental that the Reagan-Bush agendas in education rely heavily upon the positivist research of the "effective schools" tradition, since this tradition so effectively decontextualizes the crisis in the schools by treating it as the result of mismanagement, and hence as something to be overcome through public schools with stronger principals and and clear basic skill instructional goals, or through privatized schools run directly by business. The crisis in American education and American culture runs much deeper, and it is critics and theorists such as Giroux who remind us of this, and also that we may choose to take up an alternative discourse, one that grounds research and theory within the struggles that organize American culture and within the context of democratic projects of social justice and empowerment.

Giroux is wise in differentiating between the oppressive and controlling manifestations of modernism that are typically found in much mainstream professional educational discourse, and that modernist discourse that is associated with the realization of democratic commitments and values. Historically, a liberal form of modernism has been associated with the Enlightenment project of increasing human freedom and dignity, decreasing human suffering and injustice, and maximizing democratic decision making within a society that respects difference. Giroux argues that these modernist themes still have relevance in the postmodern world, but that their meaning can no longer be understood in some abstract, essentialist, decontextualized sense. Now when we speak of the Enlightenment project and values of freedom, democracy, community, and equality, we must recognize that we give them meaning within historical contexts through the development of democratic social movements and agendas that challenge injustice and inequity. The struggle for democracy and equity, consequently, must be given new meaning in each historical era; we cannot rely merely on what the "founding fathers" had in mind when they framed the Declaration of Independence and Constitution, for we live in a new time and age. How then do we proceed in deciding what students need to know and how to teach them?

This is where the notion of "border crossings" serves an important role in defining postmodern curriculum and pedagogy. In a general sense, the notion implies that we tend to construct our identities and interpret social interaction in terms of rigidly-bounded or bordered categories that do not allow for new forms of interaction or knowledge. For example, implicit in the process of constructing a "masculine" identity in this culture is the process of constructing conceptual borders that separate the self from anything presumed to be "feminine"—including expressiveness, caring, etc. The same sort of process typically operates in constructing racial barriers that define "whiteness" and "blackness" in oppositional terms. Our self-definitions are thus relational and always imply some positioning of ourselves as different than or in opposition to "others." While postmodernists argue that this is a more-or-less "natural" tendency within language, it may be taken for granted or deliberately countered through critical self-reflection. Within the discourse of the educational encounter, Giroux argues, "students should engage knowledge as border-crossers, as people moving in and out of borders constructed around coordinates of difference and power." Giroux defines border pedagogy as a form of cultural work that involves "challenging existing boundaries of knowledge and creating new ones" (p. 29). Border crossing is in these ways similar to what Jean Francois Lyotard calls "paralogy"—the constant search for new ideas and constructs to rupture culture and introduce dissensus into consensus (Fritzman, 1990). It also implies an examination by students of various cultural codes– the code of competition, rugged individualism, domesticity, and privilege. this, of course, is where curricular and pedagogical issues become unavoidably political. A democratic society committed to multiculturalism and diversity, Giroux argues, must help young people cross conceptual borders that separate them from various "others"—those of a different class, race, gender, sexual orientation, age, etc. Rather than take for granted an essentialist treatment of these cultural categories, Giroux argues that teachers need to help students see these categories as socially and historically constructed, and as deeply implicated in structuring power relations and dynamics.

Although Giroux continues to be primarily concerned with pedagogical practice within educational sites, he has now broadened that category substantially to include all those involved in "cultural work." To Giroux, cultural workers include teachers, artists, writers, lawyers, social workers, doctors, theologians, and others who are concerned with "the analysis of textual, aural, and visual representations and how such representations are organized and regulated within particular institutional arrangements." The common objective of all cultural workers in this sense is to mobilize knowledge, desire, and power to create new public spheres "in which the principles of equality, liberty, and justice become the primary organizing principles for structuring relationships between the self and others" (p. 5). The role of cultural workers is to "resurrect traditions and social memories that provide a new way of reading history and reclaiming power and identity. Within this view of memory, history, and identity, the concept of academic disciplinary borders breaks down..." (p. 242).

In a democratic, postmodern society, Giroux argues that this requires support for a politics of difference and diversity (a form of radical pluralism) rather than a policy of homogenization and conformity to a standardized norm. In curriculum, this implies that multiculturalism is moved from the margins to the center of

(continued on page 34)

Book Review: Border Crossings *(continued)*

concern and that its subject matter is reconceptualized. The modernist project has been to "normalize" and socialize the individual to fit an ideal norm, and those who have not been able or willing to fit the norm—because of their class, gender, race, sexual orientation, etc., have been made the subject of a normalizing discourse. Giroux observes that, "Multiculturalism is generally about Otherness, but is written in ways in which the...oppositional potential of difference as a site of struggle is muted" (p. 117). Rather than view differences in this way, in terms of a cultural standard in which some students are treated as "deficient," Giroux suggests that we need to celebrate the differences students bring to the learning process, and teach students to respect differences.

Any discussion of this book would be incomplete without noting that it is likely to be controversial and be criticized by scholars across the political spectrum who feel uncomfortable venturing beyond their existing conceptual paradigms. Giroux's view on multiculturalism and the role of the teacher as cultural worker will, no doubt, be viewed as threatening or too extreme by some; and those educators who view themselves as pragmatists and who are suspicious of theory will no doubt be displeased because there is not more "hard" empirical data in this book. We need to accept Giroux for what he is—a major theoretician of curriculum and pedagogy who is able to rethink educational issues and refocus our attention on important new ways of perceiving and organizing educational practice.

There always has been a deep suspicion of theory among many university-based educators engaged in the "real world" of preparing future teachers and administrators. They tend to view theorizing as an "ivory tower" activity, too idealistic and utopian to be of practical value in helping teachers and administrators respond to the everyday demands placed upon them. This attitude towards theory is what Cleo Cherryholmes (1988) calls "vulgar pragmatism" an unreflective orientation toward the immediate task at hand that prevents one from seeing the broader context within which discourse and practice takes on meaning. Of course, theory needs to be practical, and *Border Crossings* is precisely about the inseparability of theory and practice in education. However, Giroux insists that our practice not be vulgar, that we reflectively locate and position our practice within struggles over power and knowledge. Concrete, empirical research in schools and other educational sites is needed, and this book should provide a fertile theoretical grounding for qualitative research in schools that focuses on student identity construction, the role of the teacher as a transformative intellectual, the borders that are erected and crossed in schools and classrooms, and the struggles over class, gender, race, and sexuality that permeate and shape the schooling process.

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Multicultural Considerations in Assessment *(continued from page 26)*

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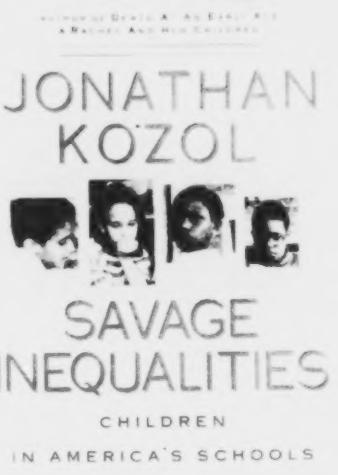
Book Review:
Nothing Has Changed



A review of: Kozol, J. (1991). *Savage inequalities*. New York: Crown.

Reviewed by: Jesus Garcia,
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Many of us who prepare young adults for the teaching profession were one-time social activists. Perhaps we did not possess a social consciousness when we entered college in the sixties, but that soon surfaced as we were introduced to some of our required readings: *The Other America* (1962), *Assimilation in American Life* (1964), *Culture and Poverty* (1968), *Crisis in the Classroom* (1970), *Racial Oppression in America* (1972). We committed ourselves to addressing the plight of minorities and the poor and vowed to transform society by changing public education; we graduated from college and entered public schools determined to provide inner-city and rural youth with the same quality of educational experiences accorded to suburban youth. Unfortunately, while some of us may be able to recount individual triumphs, the bittersweet truth, according to Jonathan Kozol in *Savage Inequalities*, is that we failed in our mission:

"Nothing has changed" (p. 114).

Is Kozol's assessment of urban education correct? Haven't the billions of federal, state, and local monies allocated to schools over the past three decades enhanced the educational opportunities of inner-city and rural youth? What of the numerous projects cited in the literature shown to have been successful in increasing the educational opportunities of inner-city and rural youth? Perhaps we can show that some progress has occurred if we compare Kozol's findings with those of Harrington and Silberman, two of the most influential writers in the sixties and seventies who wrote about the poor and their experiences in public schools.

In the early thirties, as a result of the Depression, many Americans experienced poverty firsthand. Soon after WW II economic prosperity returned and most Americans assumed that poverty was no longer a social malady. However, in the early sixties we were once again made aware that poverty had not been eradicated, but that mainstream Americans had simply refused to recognize this disease in inner-cities and rural areas. Michael Harrington's *The Other America* boldly confronted Americans with the horrors of poverty and carefully described how this cancer is inextricably tied to the country's economic and political climates and the moral tenor of those who control the quality of education in the public schools. Segregation, Harrington maintained, is strongly tied to racial poverty, "As long as Negroes and other minorities are segregated into neighborhoods, the impact of all civil rights legislation is softened" (p. 79). "[I]t is possible for a city like New York to have a public policy in favor of integration, and yet maintain a system of effective segregation" (p. 77). Harrington also questioned America's commitment to its less fortunate: "...America at the beginning of the sixties does not seem prepared to devote the resources to the problem that are required if it [integration of neighborhood and schools] is to be solved" (p. 80).

A decade later Charles Silberman, in *Crisis in the Classroom*, wrote a scathing description of public education, particularly the quality of education provided to minorities. "The schools have changed substantially in the postwar period; on almost any measure they are doing a better job of educating minority-group and lower-class children than a generation ago. But not enough better; on almost any measure, the schools are still failing to provide the kind of education Negroes, Indians, Puerto Ricans, Mexican-Americans, Appalachian whites—need and deserve" (p. 62). And, like Harrington, he questioned whether society is committed to the principle of equity, "it is not unreasonable, however, in a society that prizes (or claims to prize) equality of opportunity, to expect the schools to be a significant influence—to expect them to make the opportunities open to its students less dependent on their social origins. And that means making it possible for students from every social class and every ethnic group to acquire the necessary skills" (p. 62).

Two decades later, Kozol describes schools in metropolitan areas serving the poor and the more affluent by examining the issue of funding for public education. He provides us a tour of metropolitan centers in Illinois, New York, New Jersey, Washington, D.C., and Texas to underscore the stark realities of "equity" in the funding for urban education. Tragically, whether in East St. Louis, Chicago, New York City, Camden, Washington, D.C., or San Antonio, quality education is tied to the ability of peoples to tax themselves at a rate that provides their children with a quality education and to state funding formulas aimed at ensuring "equity." In both instances minorities and the poor are at a decided disadvantage when competing with the more affluent: (1) since property is worth less in poor communities than in affluent ones, the poor are unable to raise the revenues necessary to operate a school district at the same rate as the richest districts; and (2) state formulas used to fund public education favor the middle class by adopting a minimum foundation guaranteeing "that every child has 'an equal minimum' but not that every child has the same. Stated in a slightly different way, it guarantees that every child has a building called 'a school' but not that what is found within one school will bear much similarity, if any, to what is found within another" (p. 209).

(continued on page 36)

Book Review: Nothing Has Changed (continued)

Not surprisingly, most inner city schools share common problems. "The science labs in East St. Louis High are 30 to 50 years outdated...the six lab stations in the room have empty holes where pipes were once attached" (p. 27). In Chicago the magnet schools, intended to provide greater educational opportunities for all children, are skimming the talent pool and leaving the traditional schools with the less fortunate children. In North Lawndale, characterized as Chicago's industrial slum area without any industry, an elementary principal complains of having to accept as permanent substitutes tenured secondary teachers who have lost their high school jobs as a result of low enrollment. In New York City schools are overcrowded; the capacity of Public School 261 in District 10 is "900 but there are 1,300 children in the school" (p. 85). Regardless of the city the problems seem insurmountable: segregation, teacher apathy and burnout, lack of basic textbooks, outdated materials, inadequate student counseling, incompetent teachers, high teacher and student absenteeism, lack of competitive teacher salaries, and crumbling buildings.

Suburbanites, just outside of America's inner cities, offer children and young adults a strikingly different educational environment. New Trier High School, located in a Chicago suburb, is situated on 27 acres of prime real estate. "One wing of the school, a physical education center includes three separate gyms, also contains a fencing room, a wrestling room, and studios for dance instruction. In all, the school has seven gyms as well as an Olympic pool" (p. 65). The curriculum is also of Olympic dimensions, "courses in music, art, and drama are so varied and abundant that students can virtually major in these subjects in addition to their academic programs. The modern and classical language departments offer Latin and six other foreign languages ...in a senior English class, students are reading Nietzsche, Darwin, Plato, Freud, and Goethe...the average class size is 24; classes for slower learners hold 15" (pp. 65-66).

While Harrington and Silberman did not intend to compare the inner-city with suburbia, their descriptions of the poor and inner-city schools seem similar, if not identical, to Kozol's. "Nothing has changed."

While Kozol may find some hope in more effective ways of distributing state financial resources, the evidence suggests otherwise. As Harrington and Silberman suggested, the real problem is the lack of commitment from the more affluent to assist the less fortunate. The more affluent are interested in "equity" but not at the expense of their children; they believe their responsibility is to provide their children with every opportunity to maintain their economic and educational advantages over others; they are not interested in sharing their wealth with poorer districts. Moreover, they do not feel a strong responsibility for the poor. ["By a nine-to-one ratio, according to a recent survey, suburban residents resist all efforts to provide more money to Chicago's schools," (p. 67).]

There is even more bad news. According to Wilson in *The Truly Disadvantaged* (1987), the gap between the rich and poor has widened in recent years not only across racial and ethnic groups but within these groups. Kozol is incorrect, things have changed. Today, the poor are trapped in prisons we call inner-cities with little or no hope of freedom. What is the next step? Upgrading and reinforcing minimum state standards to ensure that inner-city youth are not forced to attend schools like those that Kozol describes? What constituencies at the state level will lobby for guidelines that will direct the more affluent to share their resources with the less fortunate? The state and federal funding of the sixties and seventies and the results from those efforts are evidence to many that allocating more money to schools is not the answer.

So where does this leave us? If as Kozol states, nothing has changed, what do I, a teacher-educator committed to equity, tell a young African-American living in Camden when he asks, "How come them white folks in Cherry Hills have a better school than I do? Is it because you all think I'm just a poor nigger and don't count?"

African-American Male Academies References (continued)

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The *Mid-Western Educational Researcher* welcomes opposing views on this and all topics.

Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

Do you support the development of a national curriculum for public schools?

Yes, through the fourth or fifth grade. That's all we can get a national consensus on.

—*David Berliner, Arizona State University*

I really think that we have had a national curriculum—based on textbooks and on standardized tests. It is not explicitly stated nor acknowledged, but the content and the form of the most widely used textbooks are quite similar. Since they are used in about 90 percent of classrooms, students tend to get a curriculum that is quite similar to that of others nationally. Also, the standardized tests, including the SAT, tend to set standards and goals for the nation. —*Jeanne Chall, Harvard University*

No. Recent events in the USSR have reminded me how genuinely multicultural the United States is as well. A least common denominator national curriculum, no matter how artfully crafted, is a threat to the good side of local diversity.

—*Christopher Clark, Michigan State University*

Yes and no. I believe there is some value to defining a "core" knowledge base for students at different grade levels nationally. This would allow better (more fair) comparisons with other nations. These comparisons are going on anyway, and currently make little sense. I do not favor a comprehensive national curriculum as I believe that we ought to preserve a significant amount of local autonomy in setting educational objectives.

—*Lyn Corno, Teachers College Columbia University*

No. A national curriculum would serve to demotivate teachers by taking away even more of their autonomy and sense of personal responsibility for educating their students.

—*Edward Deci, University of Rochester*

No. My reason is not opposition to the idea that everyone should be exposed to all of the major domains of knowledge and knowing, but my objection to the degree to which this concept is corrupted by curricular specifics not worth universal attention. In other words, the state of the art and science of curriculum making is such that it cannot yet produce a first-rate national curriculum. —*John Goodlad, University of Washington*

No, I believe in diversity, attentiveness to multiplicity, even as we work for a shared commitment to democratic principles and ideals (equality, freedom, human rights).

—*Maxine Greene, Teachers College Columbia University*

I support the development of a relatively small core set of expectations (purposes of instruction) as a means to ensure some common understandings among people. I do not support national curricula that specify technologies, instructional means, text, and so forth. It's a fairly safe bet, though, that school curricula will continue to be more of a sameness than different—as has been true for decades. —*Gary Griffin, University of Arizona*

There is nothing *intrinsically* reprehensible about a national curriculum for public schools. If adroitly fashioned, so that the curriculum's focus is on educational enhancement rather than state-by-state or district-by-district comparisons, a national curriculum could benefit students. A national curriculum's particulars, therefore, will determine whether it is a boon or bust.

—*James Popham, IOX Assessment Associates*

I would certainly prefer a national curriculum before having a high stakes national test, as some are talking about. Still, that national curriculum would have to promise important and worthwhile content for *all* students, if I were to be supportive. This would require major change from current practice, which makes me worry that a national curriculum might settle for less.

—*Andrew Porter, University of Wisconsin-Madison*

I believe we should have national educational goals, and national examinations, but have a diversity of curricula to reach those goals and standards. On the other hand, if citizens want a different type of education for their children, they should not be forced to have their children go through such curriculum. We should be debating and clarifying goals, but at the same time encouraging diversity and choice.

—*Kevin Ryan, Boston University*

No. The need for a personalized curriculum that meets the academic needs of all students per school district is most important. Allowing the flexibility for each school to design the appropriate curriculum for their area is critical. No school district is the same—nor are the children.

—*Jane Stallings, Texas A&M University*

All public schools in America should have the common purpose of helping students to learn to be informed and responsible citizens in a democratic society, but the particulars of the curriculum should vary with the needs of the particular student and the resources of the particular school and community.

—*Ralph Tyler, Center for Advanced Study in Behavioral Sciences*

Yes. A national curriculum and goals will concentrate efforts on essential goals; permit greater efficiency in textbooks, tests and other instructional media; allow teachers and other local educators to focus on instruction instead of "cottage-industry" curriculum making, allow districts to reassign middle managers to serve children directly, and to avoid present achievement setbacks of students that move from one district or state to another.

—*Herbert Walberg, University of Illinois-Chicago*

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1992 dues of $10 for students and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to:* Charles C. Anderson, Jr., MWERA Executive Officer, 1332 Southwind Drive, Northbrook, IL 60062; phone (708) 564-4796.

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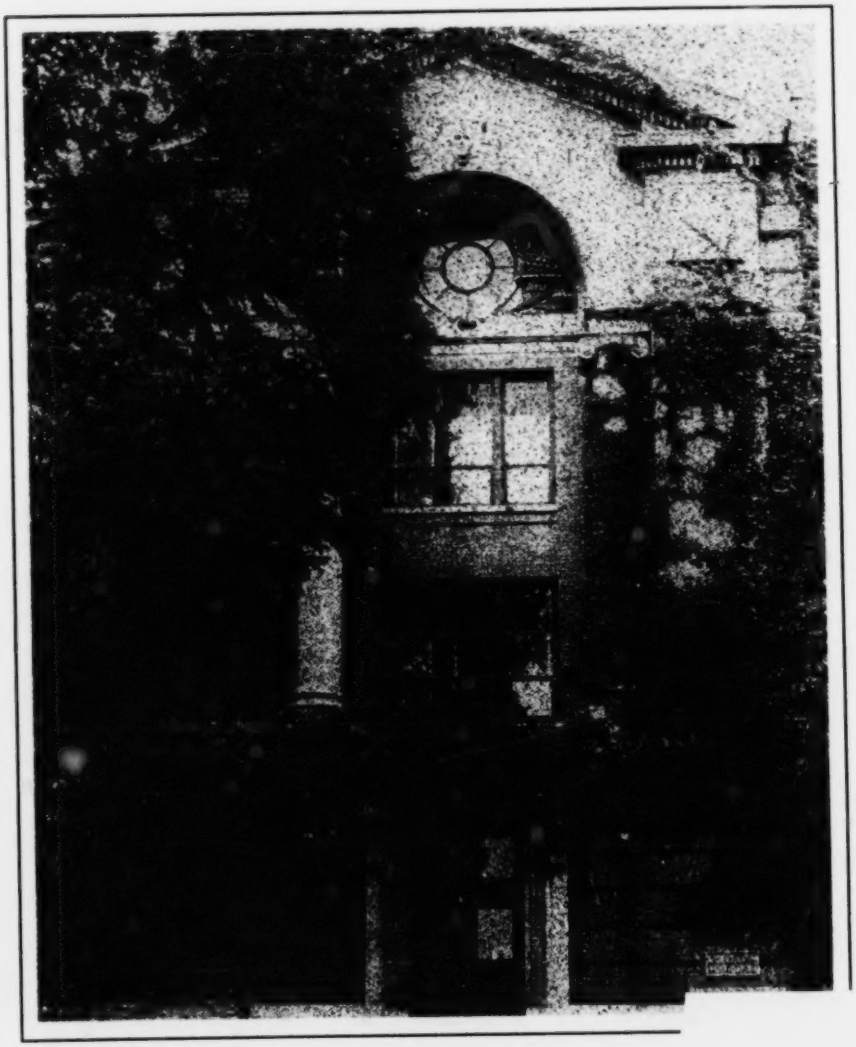

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Referenced in ERIC and housed in the Library of Congress, the *Mid-Western Educational Researcher* is gaining a reputation as a valuable source of educational research and information. The *Mid-Western Educational Researcher* attempts to represent the diversity of topics and interests of the Mid-Western Educational Research Association membership. In our last issue we dealt with the topic of multicultural issues in education; this issue has more of a measurement theme. As many of you prepare your manuscripts for October's annual MWERA meeting, please keep the *Mid-Western Educational Researcher* in mind as a publication option. The quality and diversity of the journal is determined by the manuscripts submitted.

You can facilitate the use of the journal in a couple of ways. Although library budgets are tight and periodicals are often difficult to get approved, the $18 annual membership fee is a very economical way of adding a periodical to the library shelves. Please feel free to duplicate articles and share them with students, colleagues, and school officials. We were pleased to learn that Akron Public School District officials, impressed with the multicultural education issue of the *Mid-Western Educational Researcher*, are using it as the basis for upcoming inservice programs. Whenever possible, cite articles appearing in the journal in your own work.

As a final note in this election year, please encourage others outside of education to consider education issues when deciding how to cast their vote in November. As suggested in the article by Jack Snowman in this issue, education policy often seems to exist in isolation from the results of educational research. Too often those involved in legislation and policies concerning the education of our children make judgments solely on politics and perceived popular opinion without regard for what researchers and practitioners have found. As advocates in education, we have a responsibility to educate policymakers and inform the public.

ON THE COVER

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The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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FEATURE

Use of Norm-Referenced Achievement Tests in Evaluation: Some Concerns, Cautions, and Guidelines
By R. Tony Eichelberger, University of Pittsburgh
2

ARTICLES

The Use of Kindergarten Screening Scores to Identify the Need for Reading Intervention
By John W. Fraas and Jayn Crail, Ashland University
8

Tips for Publishing and Professional Writing
By Joel R. Levin, University of Wisconsin, Madison
13

MWERA Communication and Update
15

Teacher Preparation, Social Reconstruction, and Research on Teacher Education: An Interview with Ken Zeichner
By Jay Price, University of Wisconsin-Stevens Point
17

Dropout Rates: Current Estimates Are Too High
By George H. Olson, Appalachian State University
22

The Role of Knowledge Versus Beliefs in Improving Educational Practice
By Jack Snowman, Southern Illinois University
28

Membership Expresses Opinions
By Sharon McNeely, At-Large Member, MWERA Executive Council
30

Voices in Education
Inside Back Cover

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*Use of Norm-Referenced Achievement Tests in Evaluation: Some Concerns, Cautions, and Guidelines**

By R. Tony Eichelberger, University of Pittsburgh

There are numerous reasons why norm-referenced testing has become so widely accepted and broadly implemented in U.S. schools. Resnick (1982) indicates that public support for testing was to keep our schools accountable for their costs and their educational quality. Their present uses by administrators, school board members, and politicians demonstrates this continuing process. For those interested in these types of concerns, Resnick's references provides a long list of initial sources that are quite comprehensive.

The focus of this paper is on the more limited concern of possible weaknesses of norm-referenced tests as measures of outcomes of educational programs in evaluation settings. This will be done by delineating the purposes for which the tests are developed, important steps in the test development process, and characteristics of the tests and the scores derived from them that affect their utility for decision making. The characteristics are related to the information needs of those responsible for making decisions that evaluations are to inform, and some common beliefs about the tests. Finally, guidelines are proposed for determining the utility of standardized test scores in specific evaluations.

Characteristics of Norm-Referenced Achievement Tests

Norm-referenced achievement tests were developed to assess student achievement on important educational objectives that are commonly taught in U.S. schools. (A common criterion used by test developers is to cover curricular materials studied by 80 percent or more of the students in the United States. This criterion is often applied within each of the most populous states in order to maximize potential sales.) Because of the limited time that schools have available for testing and other constraints, a limited number of test items can be used in each subject area, and each level of the test is used across two or three grade levels. As a result, each level of a test includes items that address educational objectives taught in three or more grade levels. In addition, the tests must be machine scorable, which limits the types of test items that can be used. In fact, most standardized test items are in a multiple choice format.

In this article practical and technical bases used to develop tests that school districts would find useful are emphasized. The results of these decisions on the characteristics of the tests and the scores they produce are presented and discussed within the following categories:

1. Purposes for constructing norm-referenced achievement tests.
2. Content coverage of norm-referenced tests.
3. Psychometric screening of test items.
4. Form of the measurement.
5. Summary scores.
6. Sensitivity of norm-referenced test to education.
7. Construct validity of norm-referenced achievement tests.

Much of my thinking about these issues and how the evidence can be organized to address considerations of test use has been influenced greatly by the work of George Madaus and his colleagues, particularly in their book, *School Effectiveness: A Reassessment of the Evidence* (Madaus, Airasian, & Kellaghan, 1980). Their results have been very consistent with my experiences with test use in the Dallas (TX) Independent School District, Pittsburgh Public Schools, Learning Research and Development Center, and other education evaluation settings.

Purposes for Constructing Norm-Referenced Achievement Tests. Given the pluralistic nature of this society, the fact that education is the responsibility of the states, and that the states have given the responsibility to local school boards; administrators, teachers, school board members, parents, and other citizens have needed a way to determine how the students in their school district are doing academically. With the wide variety of ways that schools choose to educate their students, there is no single method for comparing the achievement of students from different communities or states that shows how well that educational process is working, either for the individual child or for the system. Norm-referenced achievement tests were developed to assess the major subject areas (i.e., reading, math, social studies, science, spelling, vocabulary, etc.) so that, at least, knowledge and skills of students in the basic content areas could be monitored. Educators and parents would know how well students were learning basic academic skills. For example, the mother of an inner city minority student, in response to a report of how the achievement of her child's school compared with other urban schools, said: "I don't care about that, I want to know how my child is doing compared to the best students in the country, because that's who she will have to compete against."

Norm-Referenced Achievement Tests (continued)

In order to provide information that maximizes student comparisons, tests were developed that would distribute students' scores as widely as possible across the score scale. This approach maximizes reliability of a set of test scores, and is consistent with the view that students varied greatly in their intellectual capacity. In order for tests to be "fair" and comparable across school districts, they had to focus on educational objectives that were common to the various curricula used. The limitations on the number of items that could be included on a test and the form the test items could take to be machine scorable meant that only selected aspects of the content in a subject area taught in a particular class at a specific grade level could be included on a test. What has been learned about content coverage of norm-referenced tests and their resulting scores have implications for their use in evaluation settings.

Content Coverage of Norm-Referenced Tests. Most standardized tests at the elementary and secondary grade levels include between 45 and 70 items. Subtests, such as reading comprehension, vocabulary, and math computations, may include as few as 10, but typically range between 30 and 50 items. Tests are developed from the objectives covered by the 10-12 textbooks most commonly used in the United States (Madaus et al., 1980), particularly those in large cities and more populous states. After test items are developed they are tried out in developmental forms of standardized tests. Final forms of the tests are based on the item characteristics obtained from the tryout phase. Test items that nearly everyone answers correctly, as well as those that few get correct, are systematically eliminated from the final edition of the test, because they do not contribute to variation in the scores. How this affects the final content coverage of a test has never been reported, but it seems likely that some of the most important concepts that everyone in the tryout population tended to learn would be eliminated.

Two types of studies in a variety of settings that provide much information on content coverage of standardized tests are: (1) overlap between test items and content taught in a specific evaluation setting, and (2) identification of the grade level in a particular school district where that specific content assessed by the norm-referenced test is taught. The most comprehensive study that reports overlap between tests administered at specific grade levels and the content the students' actually studied that year was the Instructional Dimensions Study (Cooley & Leinhardt, 1978). In 400 first and third-grade classrooms, the mean percentage of educational objectives addressed by a norm-referenced test that students in that classroom spent time studying that year (across all classrooms) ranged from 15 percent to 56 percent. Cooley and Leinhardt report that in those classrooms with the highest percentage of overlap, more than one-third of the items on the standardized test administered to the students covered material that the students had not studied that year. In a similar type of study, results are reported in mathematics by LeMahieu (1983) at grades 2, 5, and 8 of a large urban district. He compared items on a norm-referenced test used in the district with test items on their locally developed tests that are tied to the curriculum at each grade level. Most of the norm-referenced test items assessed knowledge that had not been taught at that grade level. The overlap became less at higher grade levels, with more of the norm-referenced test items not matching items on the local tests at any grade level (see Table 1).

Table 1

Overlap Between Items on Standardized Test and Local Test (LaMahieu, 1983)

Grade Level	Test Content	Overlap*	No. of Items	Grade Taught	No. of Items
2nd	Computations	O	16	1	9
		N	10	Unknown	8
	Concepts and Applications	O	14	1	3
		N	26	3	3
				4	1
				Unknown	24
5th	Computations	O	15	3	1
		N	25	4	5
				Unknown	19
	Concepts and Applications	O	6	2	2
		N	19	3	4
				4	2
				6	1
				8	1
				Unknown	29
8th	Computations	O	4	4	2
		N	36	5	8
				6	6
				7	1
				Unknown	19
	Concepts and Applications	O	13	3	1
		N	32	5	4
				6	2
				7	2
				Unknown	23

*O = Overlap with local test item; N = not overlapped

Several studies of the overlap between the content tested by the norm-referenced test administered at a particular grade level and the content covered by the curriculum used at that grade level have been done in different ways for different purposes in several school districts. In general, they found that approximately half of the items on their standardized test assessed content that was not taught at that grade level.

These results may not be particularly troubling for many school districts that use the test results to see how the educational system, as a whole, is doing, or to monitor the progress of individual students *on the objectives assessed by the test*. It is a problem when the norm-referenced test is used to assess the effects of an innovation that has been implemented at a specific

(continued on page 4)

grade level, particularly if the program has operated for only one or two years. Each summary score, whether for a subtest or the entire battery, will be greatly affected by the quality of previous educational experiences, as reflected by students' scores on the test items addressing material taught at those levels (and not studied during the year of the evaluation in program participation).

The problem becomes even greater when attempting to evaluate exceptional groups, such as in special education, remedial, and gifted programs. In the evaluation of a remedial reading program for sixth grade students using DISTAR, there was ZERO overlap between the norm-referenced test and the curriculum (Eichelberger, Southworth, & Solter, 1980). That means that not a single item on the test administered to these students assessed an objective or skill that these students had studied during an entire year. Every item on the test assessed content that these students had not studied in the remedial program being evaluated.

The norm-referenced test was not valid as a measure of what was taught or what was learned, because there were no items that addressed that content. The norm-referenced test was still a valid measure of what the students knew in terms of the knowledge and skills assessed by the test, which a district can use to monitor how well their students are doing on these objectives (as assessed by these items). It provides NO information about what the students learned in terms of the content that they spent the year studying.

Other content that norm-referenced tests do not assess is that which is idiosyncratic to a particular school district, or classroom within a school district. The process used to select educational objectives to be included on a norm-referenced test is based on a relatively homogeneous view of the structure of knowledge and how it is taught across grade levels. When an innovative curriculum is developed that changes the order in which content is taught, or requires more in-depth understanding of subject matter at an earlier grade level, available norm-referenced tests are often invalid measures of the academic effects of those innovations. For example, Champagne and Klopfer had problems with the norm-referenced tests available for science at the elementary and middle school levels. Their new curriculum required a more sophisticated understanding of science than usually occurred at these grade levels. Their elementary and middle school students' knowledge of science was different than that of other students in the same grade. As a result, their students did poorly on norm-referenced science tests because, on some items, the answer keyed as correct (for students who had studied the typical science curricula), was not the only "right" answer for those who knew the science concepts at a more in-depth level.

This example is not meant to be typical of innovative curricula and associated standardized tests, but is to illustrate the fact that norm-referenced tests are developed to precisely assess the knowledge that is taught in the most commonly used curricula. If the educational program being evaluated differs from them, it is likely that the norm-referenced test will produce inaccurate, if not bizarre results. In many cases it may not even be a good measure of how well students know the content that the test covers, and cannot serve the type of monitoring function that most users of norm-referenced test results normally expect.

Psychometric Screening of Test Items. As indicated earlier, a primary concern of test developers is to maximize the reliability of the test scores. This increases the ability to differentiate students on their knowledge of the content covered by the test. Test items in the mid-range of difficulty (where approximately 40 percent to 60 percent of the students answer the item correctly) are needed to maximize reliability. Madaus et al. (1980) state that "In practice, test constructors seek to attain a test that contains items with a modal difficulty of about .625." They go on to indicate that those items at either end of the difficulty range (where nearly all of the students answer the item correctly or incorrectly) contribute little or nothing to distributing students' scores across the score scale. The fewer the number of items on a test, or subtest, the more important it is to have items in the mid-range of difficulty.

How this concern affects the selection of content covered on the test is not clear, although researchers have indicated their concern that important objectives which have been mastered by most students would not be tested. For educators who are concerned with mastery models of learning (where students are required to master the knowledge and skills covered by the curriculum before moving to the next topic), tests must cover the most important educational objectives for students wherever they may be studying in the curriculum. It is likely that the criteria for screening items to maximize reliability, will result in a somewhat random selection of the content to be tested, rather than including those objectives (or knowledge and skills) viewed as most important by educators.

The screening of items for psychometric characteristics may systematically eliminate those items viewed by educators as being most important, as those are the objectives that teachers will work the hardest to see that students learn. The groups of students who take the tests are more likely to score well on the items that are most important to educators, meaning that they are underrepresented on the standardized tests administered to students in the schools. It also means that the tests provide no information on the knowledge and skills that are not directly assessed by the test.

Form of the Measurement. A number of studies have shown that the form of the test items, the wording of the items, and other characteristics of the test and conditions of administration have an effect on students' scores. For example, Glass (1977) reported that in a New Jersey state assessment students averaged 86 percent correct on vertical addition problems and 46 percent on similar horizontal problems. Rice (1897) found that the teacher's pronunciation of the words affected students' scores.

Norm-Referenced Achievement Tests *(continued)*

Differences between the ways in which specific content is learned and how it is tested has long been a concern of educators. The limitations of the multiple-choice format for most norm-referenced achievement test items are not clear. But several researchers have calculated correlations between norm-referenced test scores and more direct measures of student achievement (Bloom, 1976; Foley, 1971; Stake, 1972). Few of the correlations are high. Madaus et al. (1980) indicate that the tests appear to measure different things, general ability vs. specific skills.

In evaluating the effects of the Primary Education Program (PEP) and Individually Prescribed Instruction (IPI) at the Learning Research and Development Center, we were able to document that students' achievement test scores increased dramatically after only two or three weeks in the program. The national evaluation of the Follow Through Program (where these programs were operating) gave pretests at the beginning of kindergarten, or first grade if there was no kindergarten. Comparison students were identified in the same school district. These students were similar to the Follow Through students on a number of socio-economic variables, which would predict similar levels of pretest scores on the standardized test. In fact, the Follow Through students had significantly higher pretest scores (almost a half year mean difference in grade equivalents) after only three weeks of instruction. Both the PEP and IPI curricula involved curriculum imbedded tests that were very similar to the types of test items on the Metropolitan Readiness and Achievement Tests that were used as pretests. The IPI curriculum also had an initial placement test to place each student at the appropriate location in the hierarchical curriculum. Students quickly learned how to take these tests, thus improving their scores. Others have found similar impacts with naive students (Eichelberger, 1973; Eichelberger & Boston, 1976).

Summary Scores. There are a number of characteristics of norm-referenced summary scores that affect their use in evaluation. Many different types of problems can occur, some unique to a specific situation. Most of the problems arise from: the characteristics of the group being tested, when the tests were administered, the use of group (rather than individual) scores, the use of subtest or battery scores to represent achievement levels, and the use of normal curve equivalent scores (NCEs) to compare achievement across norm-referenced tests.

When a group that is tested with a norm-referenced test is not similar to the group for which the test was developed and on which it was normed, the meaning of the psychometric characteristics of the test (such as reliability) and of the standard scores is not clear. A norm-referenced test with a reliability of .90 across the entire U.S. elementary school population may have a .60 or .75 reliability with remedial or special education students. An evaluator (or researcher) cannot assume that reliability of the test stays the same for different groups. In fact, Maduas et al. (1980) report that less than 5 percent of norm-referenced test items are at a difficulty level that remedial students could answer correctly. At the extremes of the achievement distribution, such as in remedial or gifted programs, norm-referenced tests do not provide reliable measures of student achievement.

The second problem with using a norm-referenced test with a group that is not similar to the norming sample is that the norms are not meaningful. The purpose of norms, or any transformed score, is to indicate where this score falls within some defined group. If the score comes from a person who was not represented in the norming population (such as a special education or hearing-impaired student, or an adult), the only basis for interpreting the meaning of the score is that the raw score obtained by this person is like that of a person who falls at a specific place in the distribution (such as at the 3.4 grade equivalent, the 4th percentile, or the 33rd standard score). Unless the educational program that students experienced was like that assumed by the test, the interpretation of their test scores is not meaningful in most evaluation contexts.

The time of year that a norm-referenced test is administered affects the meaning, and use, of standard scores, because test norms are developed for only one or two testing periods (usually fall and spring). Transforming raw to standard scores is based on the average (median) number of items a norm group answered correctly at a specific time in their academic life, such as the second month of the third grade (3.2). Most tests are normed for the beginning and end of the school year. If they are administered at any other time, there is no comparable data from the norming population on which to base a standard score.

As indicated above, norm-referenced tests were developed to measure the achievement of individual students in the basic skills areas of U.S. educational content. They are based on the psychology of individual differences, which requires that the instruments distribute student scores as broadly as possible in order to maximize distinctions between students. Much is known about the psychometric characteristics of individual scores from norm-referenced tests, but little is known about group scores, such as means. Cronbach and his colleagues (Ross & Cronbach, 1976) indicate that the use of such scores, and associated tests of significance, are difficult to interpret. If group scores are more reliable than individual scores, then small differences between groups may represent consistent and meaningful differences between groups who had different experiences than the classical statistical treatment of such data indicate (Ross & Cronbach, 1976).

Reporting mean scores for a group who had experienced a specific program, which is usually done in evaluation reports, usually misrepresents the outcomes of a particular innovation. Given the lack of a total overlap between what is taught in a specific educational program and what is tested by the norm-referenced test administered to program participants, mean scores do not provide adequate information about the program's effects in the subject represented by the score (such as Total Reading,

(continued on page 6)

Vocabulary, Spelling, Problem Solving, or Civics). If two programs are being compared, the total scores will mask school or program differences at the test item or objective level. This is one of the reasons for "no significant difference" findings that are so common in evaluations using traditional statistical techniques with average scores (usually means). In most comparisons between two or more programs, each program has particular strengths and weaknesses. Even though norm-referenced tests are not developed to measure such strengths and weaknesses, differences on specific test items will be far more informative than the mean or other total score. Although there are many problems with interpreting results of selected items from any norm-referenced test.

Madaus and other researchers have shown that different groups of test items within the same test, or subtest, differentiated academic achievement from different programs in opposite directions. That is, some items on a test, or subtest, showed program A to be superior, while other items on that same test, or subtest, showed Program B to be superior. In my experience, that is what occurs in nearly all education evaluation comparisons; each program has particular strengths and weaknesses, so that decisions depend on how decision makers valued which strengths (or weaknesses). When mean scores are produced, even when there are significant differences between groups, there are a number of things that the "inferior" program does better than the "superior" program. As Averch et al. (1972) and others have found, using a single number to represent the cost-effectiveness of an educational program tends to hide more than inform. Similarly, total scores, means, and other summary scores tend to misrepresent the achievement of students in a particular program, often in ways that are important to decision making.

Another type of summary score has been developed by the federal government to assess remedial programs they fund that use different norm-referenced tests, the normal curve equivalent (NCE) score. The NCE is a normalized standard score, which is calculated using the following formula:

$$NCE = 21.06z + 50 \text{ (Nitko, 1983).}$$

To use it across norm-referenced achievement tests requires the assumption that the same scores on different tests represent the same thing. It is probably the best indicator that the federal government can use to monitor Chapter I remedial programs (Tallmadge & Wood, 1976), but it is not very informative in specific evaluation settings. First, NCEs have the same problems that exist for standard scores. In addition, they use the standard scores from different tests, which in most cases means that they are based on different knowledge and skills (or objectives).

Two of the criticisms that this paper addresses are the insensitivity to education (or learning), and the fact that they are affected by a person's socio-economic or ability levels (which is discussed under Construct Validity). The insensitivity of norm-referenced multiple choice type items was best illustrated to me in 1984, while evaluating a five-week summer school for about 60 of the top achieving students in the Commonwealth of Pennsylvania. Multiple choice items were taken from a variety of standardized tests developed for high school or college students that covered, generally, the international studies topics that the school would cover. The mean scores on the items went from 38.4 on the pretest to 38.5 on the posttest (Wood, White, & Eichelberger, 1985). This was shocking to participating teachers and administrators, because the school had been very demanding and both the students and instructors knew that the students had gained a great deal of knowledge on the topics tested. When the teachers looked at the items, they indicated that, in most cases, the topic had been covered, but the specific objective that the test item assessed was not pointed out in any way. In following years the instructors and evaluators developed test items that were addressed by each class, which did document the knowledge and skills gained by the students.

Brickell (1976), in evaluating career education programs in Ohio, found that tests based on objectives stated in the various curricula guides did not differentiate such programs on student achievement. Only after they developed tests that reflected the educational activities that the students experienced were the tests able to differentiate the achievement gains of students in the various programs.

Construct Validity of Norm-Referenced Achievement Tests. There is a good deal of information which indicates that norm-referenced achievement tests are essentially ability tests. Cooley and Lohnes (1976) found that educators and researchers were unable to identify achievement test items from a list of test items taken from both ability and achievement tests. They interpreted this to mean that there are no fundamental differences between the two types of tests. Either achievement tests were, essentially, ability tests; or ability tests were actually achievement tests.

Madaus and his colleagues (1980) report that the types of item analysis techniques used to develop norm-referenced achievement tests for use across a variety of curricula "tend to purge the test of a specific-knowledge items and to select items which measure a general underlying trait" (p. 147). Evidence from a variety of sources indicates that the skills tapped by norm-referenced achievement tests are essentially the same as those assessed by ability tests, neither of which measure school-specific learning. These include the findings that intelligence tests correlate about the same with norm-referenced achievement tests as they do with other intelligence measures (Anastasi, 1968; Bloom, 1976; Coleman et al., 1966); factor analyses of norm-referenced achievement and ability measures commonly used in schools show that both are highly dependent on a general intellectual development factor (Cooley & Lohnes, 1976); and that verbal ability greatly influences achievement test scores (Bloom, 1964; 1976).

These and other studies indicate that achievement test scores are affected by a number of non-school variables, such as

general intelligence, verbal ability, drawing inferences, etc., many of which are more home-based, rather than school-based factors. Present norm-referenced achievement tests have been defined more at the general construct level than at the knowledge or skill level, where schools focus their educational energies.

These characteristics are greater at the elementary school level than at junior or senior high school levels. As tests become more content specific, such as in German, American history, civics, and chemistry, the tests focus on more school-specific variables. These tests are less like general ability tests, and have more validity as achievement tests (Bloom, 1976).

Guidelines for Use of Norm-Referenced Tests in Evaluation

Given these characteristics, what guidelines do these provide for evaluators (and researchers) who either want to use norm-referenced tests to measure effects of educational programs, or who need to document the effects of educational programs and are concerned about the appropriate use of norm-referenced tests. Some questions that relate to this issue are organized within four categories: Program Outcomes and Associated Measures, Test Characteristics, Student Characteristics, and Test Administration:

A. Program Outcomes and Associated Measures.
   1. Are the primary goals and objectives of the educational program focused on topics that the norm-referenced test assesses?
   2. Is the educational curriculum based on the same set of objectives, beliefs about the structure of knowledge, and the order in which the objectives are taught as those 10-12 curricula on which the test was developed?
   3. Is the knowledge taught in a way, including format, that is consistent with how it is tested on the norm-referenced test?
   4. Is the norm-referenced test likely to be sensitive to the effects of the program, if such effects occur?
   5. Are the subtest or total scores likely to be meaningful in this setting, or should specific test items be analyzed?
   6. Are there other measures, or indicators, of academic achievement (such as reports, papers, tests or grades) already being collected that would more accurately assess important educational outcomes or effects?
   7. Should additional measures, or indicators, of academic achievement be identified or developed?

B. Student Characteristics
   1. Is the group of students similar to those on whom the test was normed? If not, will the test provide scores that accurately represent the knowledge and skills of these students?
   2. Are other tests that are appropriate for the unique students in this particular program being administered?
   3. Should additional measures, or indicators, be identified or developed for these students?

C. Norm Referenced Test Characteristics
   1. What is the overlap between the objectives that are taught (studied) in this program and the items on the test?
      a. Are the most important objectives of the program measured by the test?
      b. What is measured by the test that is not covered by students in the program?
   2. Has this test (or any other norm-referenced test) been used in the past to assess the effects of this program, or to assess these students when they used other curricula?
      a. Have students evidenced academic growth that was expected by the teachers or other educators?
      b. Was student's academic achievement meaningfully different on this norm-referenced test in comparison to other tests?
      c. Are students' scores higher when this test is used to assess the academic outcomes of this program than when other norm-referenced achievement tests were used?

D. Test Administration
   1. Is the test administered during the same month that test publishers had developed norms for the test?
   2. Is the test kept under secure conditions so that no one can teach the specific test items?
   3. Do some teachers or schools provide test-taking practice that would invalidate the test norms?
   4. Is the test administered precisely as described by the test publisher?
   5. Do teachers or principals do anything unusual to prepare students for the test, or allow any way for a particular teacher to modify students' responses in any way?
   6. If a norm-referenced test is used in an evaluation, is any particular group of students absent from the test administration, or tested in a way that would affect their scores?

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(continued on page 16)

The Use of Kindergarten Screening Scores to Identify the Need for Reading Intervention

By John W. Fraas and Jayn Crail, Ashland University

Abstract

The purpose of this study was to examine the possibility of using the kindergarten screening scores to predict whether a student would qualify for a reading intervention program in first grade. If the kindergarten screening scores could be used for early identification, the administration would consider implementing an intervention program prior to when the students entered first grade. A sample of 243 students was selected from the seven elementary schools in an Ohio city. The scores of 121 students were subjected to logit regression analysis. The remaining 122 students were used as a holdout group for the purpose of cross-validating the logit regression model's ability to correctly discriminate among students who did or did not qualify for the current reading intervention program. Since the model produced few false-positive classifications, the school administration could use the model to identify students for its new intervention program.

Children who do not learn to read by the end of first grade will fail to achieve in almost all other areas of the curriculum (Boehnlein, 1987). For many children, regular classroom instruction is all that is needed, but experience in regular classrooms alone is not sufficient for some students. Thus, in response to this need, many public school systems have developed reading intervention programs. One element of these intervention programs is early identification of students who need reading assistance.

In current literature, a debate has continued on the use of kindergarten screening instruments. Titles such as: "Not Ready! Don't Rush Me!" (Hammond, 1986); "Uses and Abuses of Developmental Screening and School Readiness Testing" (Meisels, 1987); and "How Best to Protect Children From Inappropriate School Expectations, Practices, and Policies" (Bredekamp & Shepard, 1989), point out the controversy surrounding the current uses of kindergarten screening procedures. The very practice of testing groups of young children is questioned in various articles (Charlesworth, 1989; Wodtke, Harper, Schommer, & Brunelli, 1989). The reliability and validity of screening instruments are major concerns that have been noted by several researchers (Bredekamp & Shepard, 1989; Meisels, 1987; Wodtke, Harper, Schommer & Brunelli, 1989).

Meisels (1985) notes that kindergarten screening is a brief assessment procedure designed to identify those children who need a more intensive level of diagnostic assessment. It is the first step in evaluation, prevention, and intervention.

Various books and articles discuss the importance of early intervention in preventing reading problems (Clay, 1985; Felner & Felner, 1989; Hawkins, 1985; Kilby, 1984). Badian (1982) examined the possibility of predicting reading levels before kindergarten. Her data supported the view that "...early identification (before kindergarten, if possible), followed by early special help in reading readiness and reading skills, has a beneficial effect in reducing the incidence of reading disability" (Badian, 1982, p. 317).

This study was undertaken because a school administrator in a public school in Ohio wanted to know whether the kindergarten screening scores of his students could be used to determine which students would qualify for a reading intervention program in first grade. If such predictions could accurately be made, the school administrator wanted to develop a new intervention program that could be implemented before the students reached first grade.

This study used logit regression analysis to determine if the students' kindergarten screening scores could be used to accurately predict who would qualify for reading intervention in first grade.

Methods

Setting and Subjects

The students used in this study were enrolled in a public school system located in a city of 22,000 people. The city has a diverse economic base consisting of agriculture and small industry, and it is a university community as well as the county seat. The school system enrolls 4,167 students in grades kindergarten through twelve. There are seven elementary schools (K-6), one junior high school (7-8), and one high school (9-12). More than nine percent of the students receive assistance from the Aid to Dependent Children program (ADC) and 22 percent of the students are eligible for free or reduced priced lunches (Cox, 1989).

A sample of 243 students was selected from the seven elementary schools in the city. These students consisted of 113 males and 130 females. All 243 students had completed the school system's kindergarten screening test; and they had been identified by the beginning of first grade as needing reading intervention or not needing reading intervention.

Variables

Criterion variables. The criterion variable in this study was a dichotomous variable that indicated whether each student did or did not qualify for the first-grade reading intervention program. A student qualified for the program by scoring below the 36th percentile on the standardized Iowa Test of Basic Skills (Hieronymus, A., Hoover, H., & Lindquist, E., 1986) given in kindergarten, or through teacher recommendation and scoring below the 36th percentile on the Gates-MacGinitie Reading Test (MacGinitie, W. & MacGinitie, 1989) in first grade. A value of 1 was assessed to those students who qualified for the reading intervention program; and a value of 0 was given to the students who did not qualify.

Predictor variables. The predictor variables consisted of four kindergarten screening subtest scores: (a) gross motor scores, (b) perceptual scores, (c) fine motor scores, and (d) ABC Inventory scores. The four subtests were scored on a scale ranging from 1 to 3, with the value of 1 representing a lower level of performance.

The gross motor subtest was designed to measure the child's ability to identify body parts and the child's degree of large muscle coordination. The measurement was obtained by volunteers from a local university. A child's perceptual score was obtained through the administration of the Visual-Motor Integration Developmental Test (Beery & Buktenica, 1967). This test was given by the school psychologist. The fine motor subtest assessed the child's ability to handle writing materials and manipulatives. The observations of the children were made by school guidance counselors in groups of two to four students. Each child was evaluated with the ABC Inventory (Adair & Blesch, 1965). The kindergarten teacher conducted this general knowledge assessment.

Procedure

The purpose of this study was to determine if the kindergarten screening subtest scores could be used to predict which students would qualify for the first-grade reading intervention program. Since the criterion variable consisted of two categories, the data were analyzed with a logit regression model (Hosmer & Lemeshow, 1989; Judge, Griffiths, Hill, Lutkepohl, & Lee, 1985; Pindyck & Rubinfeld, 1991).

The sample of 243 students was randomly divided into two groups. One group that consisted of 121 students was analyzed with the logit regression model (see Table 1 for descriptive statistics). The remaining 122 students formed a holdout group that was used to cross-validate the logit regression model. The mean values of the predictor variables for the two groups—the group being analyzed and the group that served as the holdout group—did not differ at the .05 level of significance.

Table 1

Descriptive Statistics for the Group Analyzed by the Logit Regression Model

Variable	Mean	Standard Deviation
Group Membership	.37*	———
Gross Motor Score	2.44	.59
Perception Score	1.94	.67
Fine Motor Score	2.03	.55
ABC Inventory Score	2.26	.71

Note. *Indicates that 37 percent of the students qualified for the program. $n = 121$.

Five steps were used to evaluate how well the logit regression model was able to classify students. First, a chi-square value was used to test the difference between the quantities of -2 times the observed likelihood of the model that contained only the constant term and -2 times the observed likelihood of the model that contained the constant term and the four predictor variables. This chi-square value was used to determine whether the null hypothesis, which states that all of the coefficients of the predictor variables were equal to 0, should be rejected. The alpha level was set at .05 for this test.

Second, the Wald test, which is the square of the ratio of the coefficient to the standard error, was used to test whether each coefficient differed from zero. The alpha level used for the test of each coefficient was .0125, which was equal to .05 divided by the number of coefficients tested (4).

Third, the maximum chance criterion of correctly classifying students was used. This criterion requires that the proportion of students correctly classified by the model must be greater than the proportion of students in the largest group. We required the percent of students correctly classified by the model to be 25 percent greater than the maximum chance criterion value (Hair, Anderson, & Tatham, 1987).

Fourth, the proportional chance criterion of correctly classifying students was also applied to the model. In the proportional chance criterion the proportion of students correctly classified by the model must be greater than the sum of the square of the proportion of students in the two groups. Again, we required the percent of students correctly classified by the model to be 25 percent greater than the proportional chance criterion value.

Finally, since the new program could accommodate a limited number of students, it was important for the model to produce few false-positive classifications. That is, the model should classify few students as qualifying for the first-grade program

(*continued on page 10*)

when they would not qualify. Thus, it was decided that for practical significance the model should produce no more than 10 percent false-positive classifications.

Results

Evaluating the model

The analyses of the logistic regression model are contained in Table 2. The chi-square value used to test the null hypothesis that all of the four coefficients of the predictor variables were equal to 0 was 27.054 ($p < .001$). Since the probability value was less than the .05 alpha level, the null hypothesis was rejected.

Table 2

Logit Regression Model

Variable	Coefficient	S.E.	Wald	DF	Sig
Gross Motor	− .405	.379	1.145	1	.285
Perception	− .279	.381	.537	1	.464
Fine Motor	− .421	.437	.926	1	.336
ABC Inventory	−1.139	.357	10.188	1	.001
Constant	4.323	1.218	12.605	1	.0004

Note: The −2 log likelihood value for the full model is 132.656.
The −2 log likelihood value for model with only the constant term is 159.710.
The model chi-square = 27.054, $df = 4$, $p < .001$.

An examination of the Wald test used to test the four coefficient values indicated that one null hypothesis could be rejected. Only the Wald test for the ABC Inventory scores was statistically significant ($p < .0125$). Therefore, the ABC Inventory scores had a statistically significant impact on the classification of the students.

Table 3, which contains the information regarding the model's ability to accurately classify the students in the holdout group, indicated that 60 of the 67 students (89.6%) who did not qualify for the reading intervention program were correctly identified. Thus, the model produced seven (10.4%) false-positive classifications.

Twenty-five of the 55 students (45.4%) who did qualify for the program were accurately classified by the logit model. Thus, the use of the model resulted in 30 (54.6%) false-negative classifications. In the aggregate, the model was able to correctly classify 85 of the total of 122 students (69.7%).

The maximum chance criterion, which is equal to the proportion of students in the holdout group who did not qualify for the program, was .550. The proportion of students who were correctly classified by the model (.697) was slightly in excess of the figure that is 25 percent higher than the .550 criterion (.688).

Table 3

Correct Classification for the Holdout Group with the Logit Regression Model

	Predicted Group Membership			
Actual Group Membership	Did Not Qualify	Did Qualify	Total	%
Did not qualify	60	7	67	89.6
Did qualify	30	25	55	45.4
Total	90	32	122	69.7

The proportional chance criterion value was .505. Again, the proportion of students accurately classified (.697) by the model exceeded the figure that is 25 percent more than the .505 proportional criterion (.631). As indicated by the percent of students classified correctly for each group, the model was much better at identifying students who did not qualify for the program (89.6%) than the students who did qualify (45.4%). The model incorrectly classified slightly more than 10 percent of the students who did not qualify for the first-grade program. Thus, the model came close to meeting the practical significance criterion of not producing more than 10 percent false-positive classifications.

Discussion

The school administrators could use the model even though the model was able to correctly identify only approximately one half of the students who would eventually qualify for the reading intervention program. Those students who were identified as needing assistance by the model could be placed in the new intervention program. Since the model produces a low percentage of false-positive classifications, few students who do not need assistance would be placed in the new program.

The identification of the students who would eventually qualify for the program could be made by multiplying each of the four scores of a given student by each of its respective coefficients in the model and adding the constant to the sum of those products. Dividing the natural log of this value by one plus the natural log of the value would give the predicted probability that the student would qualify for the first-grade reading intervention program (Pindyck & Rubinfeld, 1991). If this probability exceeds .50, the student would be identified as needing reading intervention.

To illustrate, assume a student received a score of 2 on each of the subtests. The student's predicted value would be

calculated as follows using the coefficient values listed in Table 3:

$$Y = 4.323 - .405(2) - .279(2) - .421(2) - 1.139(2)$$
$$Y = -.165$$

The probability that the student would qualify for the first-grade reading intervention program would be calculated as follows, where e indicates natural log:

$$p = \frac{e^{(-.165)}}{1 + e^{(-.165)}} = .46$$

Since the probability is less than .50, the student would not be classified as one who would eventually qualify for the first-grade reading program.

Conclusions

This study examined the ability of four kindergarten screening subtests to identify which students would qualify for the first-grade reading intervention program. The scores were analyzed with a logit regression model. The results of the analysis indicated that the four subtest scores correctly identified 69.7 percent of the students in the holdout group. Nearly 90 percent of the students in the holdout group who did not qualify for the reading intervention program were correctly classified by the model. Less than one half (45.4%) of the students who qualified for the program, however, were correctly classified by the model.

Due to the low number of false-positive classifications, the logit regression model presented in this study could be used by the school system. This could be done in spite of the fact that the model was able to accurately identify less than one-half of the students who qualify for the first-grade reading intervention program. If a lower number of false-negative classifications was deemed necessary, one might investigate the inclusion of information obtained by the kindergarten teacher during the first half of the year. This avenue of investigation is worthy of further study since placing students in the optimum learning environment is an important educational goal.

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Tips for Publishing and Professional Writing

By Joel R. Levin, University of Wisconsin, Madison

The "tips" provided here are culled from a number of sources, including: (a) a mini-session on publishing in professional journals, held at the 1991 annual meeting of the American Educational Research Association; (b) a recently discovered article by Symonds (1956) that contains more than 130 useful research-and-writing suggestions for doctoral students in educational psychology; (c) the would-be publisher's Bible, the publication manual of the American Psychological Association (1983); (d) an amusing, yet informative, article by Holbrook (1986), a professor of marketing; (e) Calfee and Valencia's (1987) guidelines for prospective submitters of manuscripts to the *Journal of Educational Psychology*; (f) Sternberg's (1988) very readable book on research and publishing in psychology, which includes 26 "rules" for writing more effectively; and (g) lessons learned from my own professional experiences as a researcher and journal editor (most recently, as Editor of the *Journal of Educational Psychology*). What I have to say pertains more to publishing primary empirically based research than to theoretical pieces or literature syntheses.

I will consider four general aspects of publishing scholarly empirical research: *superstitious*, *cognitive*, *metacognitive*, and *affective*.

Superstitious Aspects

The superstitious aspect incorporates several misconceptions that are commonly held about the "road to publication success," as, for example:

- manuscript length
- margin widths, including the number of lines per page
- printer and font quality
- numerous other surface—as opposed to substantive—characteristics of a manuscript

In addition, one must be mindful of the following humorous old spouses' tales:

- Manuscripts that contain a colon in their title (to represent a subtitle) have a greater probability of being published than those that don't (Dillon, 1981).
- "The longer the title, the poorer the article" (Bearman, Loewenson, & Gullen, 1974).

Cognitive Aspects

Cognitive aspects of the research/publication process are represented in "selling" my seven "Cs" of publishing success:

1. Conceptually sound (with respect to the theory, model, or issue being investigated)—In short, does the research "make sense" in terms of its conceptual rationale and operationalization?

2. Complete package—Does the research "tell a story?" A useful positive criterion for an editor is an affirmative response to the question, "Is the study interesting and memorable enough for me to summarize its essence to a friend the day after reading it?" Multiple-experiment studies often help to provide a more complete package—even though it is not always easy to sell this notion to young (untenured) researchers. At the same time, researchers need to be aware of current professional concerns about, and proscriptions against, "piecemeal" and "duplicate" publication (e.g., *Publication manual of the American Psychological Association*, 1983, pp. 167-168).

3. Creative—Is the research clever? Does it have an innovative twist? Does it take a novel perspective (e.g., looking at an old problem in a new way)? In conceptualizing the research, did the author—in Sternberg's (1991) words—"take risks?"

4. Coherently presented ideas—The first five items discussed are quoted directly from the writing adages of Holbrook (1986, pp. 106-107):
   - "Do not hesitate to make your paper interesting."
   - "Remember that brevity is the soul of wit."
   - "Adjust the overall length of your paper to the magnitude of its contribution."
   - "Don't carve your work too thin and thereby sell yourself short."
   - "[Write] clearly."

   I have added three suggestions to the list:
   - Learn—indeed, master—APA style.
   - Be able to read your manuscript from a critic's—or even a skeptic's—perspective, both while you are writing it and after a delay of several days. Seeking colleague feedback about the quality of your writing and ideas is both acceptable and desirable. (It is appropriate to acknowledge such feedback formally in a footnote.)
   - Make sure that any uncited words and propositions are your own, and neither verbatim restatements (plagiarism) nor parallel paraphrases of them (what I have previously referred to as "paraphragiarism").

5. Clean methodologically (confoundless; 99¼% contaminant-free)—Are the conclusions justified on the basis of what was done?

Tips for Publishing (continued)

6. Computationally correct—Several true-to-life horror stories can be related to support the claim that data-analysis errors and other numerical mistakes are pervasive in the published literature (see, for example, Levin, 1985). You, as author—and not the person who you paid to transcribe the data, perform the analyses (by hand or by computer) or type the manuscript—are the one who is responsible for the information presented in a journal article. Neither can the computer program you used to analyze the data be held accountable!

7. Connected to educational practice—If your study is to be reported in an *educational*-research journal, it is not unreasonable for you to spell out the implications of your findings for a particular educational problem or practice.

Metacognitive Aspects

Metacognitive aspects of research and writing include what may be referred to as *manuscript-monitoring skills*. The superordinate skill is one of acquiring a realistic perspective of the research/publication process. In particular, naive beliefs about the simplicity of publishing in professional journals (i.e., select a topic, conduct a study, and publish the findings in the *Journal of Educational Psychology*) must be replaced by more informed notions about the multi-stage (multi-obstacle) nature of the process. Specific manuscript-monitoring skills are reflected in the following questions and associated evaluation skills:

1. What topic should I select? (a *problem-evaluation* skill)

2. Is the study worth doing? (a *research-evaluation* skill)—Not every idea you have is worth researching. In addition, when designing a study, try to create multiple opportunities for something interesting to happen (e.g., "If the results come out this way, I could talk about them from perspective X; if they come out that way, I could talk about them from perspective Y.") rather than "putting all your eggs in one basket" (e.g., "If the results come out this way, I'll have lots to write about; if they come out that way, I'll have nothing to write about.") This does not imply, however, that you should look for "everything under the sun," seeking spurious significance in a hypothesis-free environment.

3. Are the findings worth publishing? (an *outcome-evaluation* skill)—Once the data have been collected, it may be useful to engage in a cost-benefit analysis of manuscript preparation. Know when to go and when to just say "no," as well as how to assess when a follow-up study should be conducted and included as part of the "package." This point encompasses Holbrook's (1965) comments about manuscript length. You also should be aware of the well-documented biases against publishing nonsignificant results (e.g., Greenwald, 1975), as well as of the consequences of not attempting to publish them —or what has been referred to as the "file drawer problem" (Rosenthal, 1979).

4. Where should the findings be published? (a *journal-evaluation* skill)—This helps you to establish the tone and flavor of the manuscript. Knowing your audience also enables you to develop a distinguishing "hook" or punchline for your report of the study. Know your journals (in terms of their perceived reputational quality). Be discriminating; not every study you conduct will be of Nobel quality. Use good judgment in deciding about the match between the quality of the research and the quality of the journal to which it is submitted. On the other hand, some researchers adopt an alternative strategy, wherein they submit a less-than-superb manuscript to an elite journal with two expectations: (a) that the manuscript will be rejected; and (b) that they will receive "free" high-quality editorial advice that can be incorporated when rewriting the manuscript to submit to a lesser-quality journal.

5. When should I stop writing? (a *manuscript-evaluation* skill)—Most of us have the opposite problem, namely "How do I start writing?" At some point, accept that the manuscript is "good enough." Not every thought must be a plum; not every word, a peach. Consider this article, for example: It's not perfect, but it will do. Among the numerous individuals that I have observed over the years, I have found that "perfectionist" = "incompletionist." In short, "know when to keep it so."

Affective Aspects

The final—and little-discussed—aspect of the publication process tests the affective/emotional character of the researcher, through what I have called *temperament-management* skills. As a prospective publisher, strive to develop:

- *realistic expectations*—The probability is near zero that an initial submission will be accepted "as is"; you should submit a manuscript to a journal with the expectation (if not the hope) of revising it.

- *emotional control*—Responding positively and conscientiously to constructive criticism (if such is given) is a desirable quality to acquire: "Accept the reviewers' criticism gracefully and behave as if every word of their comments offered a pearl of wisdom" (Holbrook, 1986, p. 107). Add to this *Levin's Law* of "processing reviewer feedback": The perceived amount of negativity and/or requested revision by the reviewers decreases over time. *Corollary:* So does the amount of "sheer stupidity" that you will detect in the reviews. It therefore stands to reason that you should allow yourself at least a two-day "cool off" period before deciding whether or how to tackle a revision.

(continued on page 14)

Tips for Publishing (continued)

• *perseverance*—This is a virtue that is often rewarded. It is permissible, for example, to resubmit a thoroughly rewritten manuscript that was previously rejected, as long as you provide the editor with a convincing rationale for doing so. Amicable negotiation with an editor about "required" and "suggested" editorial changes is also acceptable.

• *responsiveness*—"Write a polite letter—as long as, but no longer than, necessary—in which you explain, point by point, how you have responded to every one of each reviewer's helpful criticisms" (Holbrook, 1986, p. 107). Alternatively, you may wish to refer to an article by Baumeister (1990) for a modest example of an alternative letter that could be considered in one of your weaker moments. To quote an opening excerpt:

> Enclosed is our latest version of Ms –85-02-22-RRRRR, that is, the re-re-re-revised revision of our paper. Choke on it. We have again rewritten the entire manuscript from start to finish. We even changed the [expletive deleted] running head! Hopefully we have suffered enough by now to satisfy even you and your bloodthirsty reviewers. (Baumeister, 1990).

Publication Equation

Cognitive + Metacognitive + Affective = Effective

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MWERA Communication and Update

MWERA Election Results

Thomas Andre, Iowa State University, was elected Vice-President (to become President-Elect). Ralph Mueller, University of Toledo, was elected Secretary. The balloting called for seven members to be elected to the Association Council, however, the eight receiving the highest number of votes were elected because an extra Council member was needed to replace Tom Andre who was on the Council, but will now be serving as Vice-President. The new Association Council members are: Linda Bakken, Wichita State University; Robert Barcikowaski, Ohio University; Steven Benton, Kansas State University; Paula Dupuy, University of Toledo; Carol Anne Kardash, University of Missouri-Columbia; Tom Knapp, The Ohio State University; Tom Midgette, University of Arkansas; and Rose Mary Scott, Mankato State University. The two proposals on the ballot were both accepted: that the Life Membership dues be established at 10 times the annual regular membership dues, and that MWERA develop an application to the Internal Revenue Service for status as a charitable organization (501,3c).

MWEResearcher Review Process

When a manuscript is received for publication consideration in the *Mid-Western Educational Researcher*, a note acknowledging receipt of the manuscript is sent to the author. At the same time two of the copies received are sent to be reviewed. The reviewers are professionals with experience in the topic or methodology of the manuscript. The editors choose reviewers from the editorial board, MWERA membership, and known experts in the field. A review sheet is sent with the manuscript. Only the title of paper and a manuscript number are provided on the sheet (the title page of the manuscript is removed). The review sheet requests reviewers to evaluate the manuscript as unacceptable, inadequate, adequate, good, or exceptional in the following qualities:

Introduction
- Establishes the nature of the study
- Quality and quantity of citations

Methods
- Quantity, nature, and description of subjects
- Approach, research design, statistical procedures

Results
- Complete, concise, clear, understandable

Discussion/Conclusions
- Explains importance, relevance, and limitations of study

Overall
- Quality of writing (style, grammar, etc.)
- Article flows in a logical fashion
- Appropriateness for MWERA membership
- Contribution to the field
- Overall impression of the article

The reviewers then choose to "definitely accept," "accept with revisions," "encourage resubmission with revisions," or "do not accept." There is room for reviewer comments under each section of the review sheet, and many reviewers make notes on the manuscripts.

The editors then look for a concensus between the two reviewers and inform the author of the decision. If the reviewers deem the manuscript acceptable, minor editing may be done to the manuscript for publication or the manuscript is returned to the author for revision. If the manuscript is deemed unacceptable or requires major revisions the author may be encouraged to submit the manuscript elsewhere. If there is no general concensus concerning the quality of the manuscript, it is sent to a third reviewer. The review process usually takes about two to three months.

Many Thanks

As we approach the end of our second year, we would like to express our appreciation to the Editorial Board, the Executive Council, and the Association for their assistance and support. We especially thank the following professionals for their timely and knowledgeable review of manuscripts submitted for publication consideration:

M. Kay Alderman, The University of Akron
Linda Annis, Ball State University
Laura Barnes, Oklahoma State University
Carolyn Benz, University of Dayton
Sally Glenn Bilski, Governors State University
Norman Bowers, Northwestern University
Larry Bradley, The University of Akron
Donald Cruickshank, The Ohio State University
Raymond Dean, Ball State University
Malu Gonzalez, New Mexico State University
Betty Gridley, Ball State University
Judd Harrison, Wisconsin Dept. of Public Instruction
Mark Kiselica, Ball State University
Tom Lasley, University of Dayton
Joy McCullough, The Ohio State University
Keith McNeil, New Mexico State University
Ralph Mueller, University of Toledo
Carol Muskin, National-Louis University
Carole Newman, The University of Akron
Dwayne Olsen, University of Wisconsin-Parkside
Charles Payne, Ball State University
John Pohlmann, Southern Illinois University
Jay Price, University of Wisconsin-Stevens Point
Ulrick Reitzug, Ball State University
Larry Sherman, Miami University
Jack Snowman, Southern Illinois University
Joan Timm, University of Wisconsin-Oshkosh

(continued on page 16)

MWERA in San Francisco

Greg Marchant and Isadore Newman hosted a social sponsored by MWERA at the San Francisco Hilton during the AERA annual meeting. Approximately 80 researchers and interested others passed through their hotel room. Adria Karle-Weiss, Sue Tracz, and Sharon McNeely helped make the event a success.

Ayres D'Costa, Richard Pugh, and John Kennedy at MWERA reception at AERA in San Francisco.

ERIC Parent Guide Available

An updated version of *A Parent's Guide to the ERIC Database: Where to Turn with Your Questions about Schooling* has recently been published. The 82-page guide is available for $10 (postage paid) from the ERIC Clearinghouse on Rural Education and Small Schools, Appalachia Educational Laboratory, P.O. Box 1348, Charleston, WV 25325.

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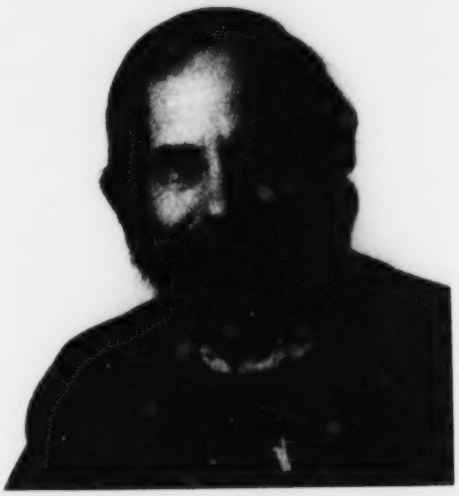
Teacher Preparation, Social Reconstruction, and Research on Teacher Education:

An Interview with Ken Zeichner

By Jay Price
University of Wisconsin-Stevens Point



Ken Zeichner is a professor of education at the University of Wisconsin–Madison. His current research interests include the education of teachers for culturally diverse environments as well as the development of social responsibility in moral and ethical terms. He is engaged also in classroom action research with both pre-service and in-service teachers and has recently coauthored Teacher Education and the Social Conditions of Schooling *and* Educating Teachers for Cultural Diversity.

JP **What this interview is meant to convey to MWER readers is a sense of your past; where you've been intellectually, epistemologically, where you are now, and where you're going. Why don't we start with your connections with your past.**

KZ I think there are a lot of connections between where I am now and where I've come from, and I find myself constantly going back to things that I was involved in many, many years ago, such as action research; I never seem to be able to leave my past. I guess one thing about my past that is evident in the kind of work I do now and the kinds of issues that I raise, has to do with where I went to school and where I taught, which is in urban school districts. I went to public schools in Philadelphia. In my high school probably less than 10 percent of the people went on to higher education. It was an urban high school that didn't offer a lot academically. I almost didn't make it through my first year of Temple University. College was a big transition for me and during my first year I was enrolled in several remedial classes.

In many respects I've come out of the same kind of environment that I taught in. I did all my teaching in inner city schools that had the lowest test scores in the district. My whole career has been committed to raising issues that deal with inequities between what goes on in schools for the wealthy and middle class and in schools in poverty areas. I think in my current work there is a great deal of emphasis on what I call social reconstruction as opposed to just teacher education. This broader perspective raises issues that have to do with equity and social justice along with other kinds of issues. We need to take equity issues into account and consider the moral, ethical, and political implications of what we're doing, and not just the educational ones or technical ones.

So, my present interests come out of this struggle both as a student and as a teacher. I taught elementary school; it was not easy, it's not easy anywhere, but I think it's particularly tough in low-income inner-city schools because of all the interconnected problems in addition to the educational ones that kids come to school with. So that's one connection.

JP **How about any other connections with your past?**

KZ I also find myself in sympathy with the grass roots school reform movement that talks about decentralizing power, giving more authority to teachers, although I do not like terms like teacher empowerment. These terms bother me because they're slogans that in a number of cases can be used to mask more subtle forms of control.

My career as a teacher took place in an environment where I had a great deal of control as a teacher. The school was managed by a school council, though they didn't call it that in those days. We were also involved with such things as action research—teachers, other practitioners producing knowledge about their work, which now is just beginning to explode all over North America. In a sense I've never been able to leave my past; it's always been with me.

JP **What was your graduate school experience and how does this fit with what you're doing now?**

(continued on page 18)

KZ I began to take classes at Syracuse University with Arthur Blumberg who used to come to our school and meet with our school council which I was on as a team leader. I became really interested in organizational change and entered Syracuse University in a doctoral program in school organizational behavior and change, organizational theory, social psychology of organizations, and change theory; so that's my intellectual background.

To finance my graduate school I worked in the teacher education department and worked with the Syracuse Teacher Corps Project as a team leader and teacher center director. So, all of my practical work was in teacher education, although none of my coursework really was.

When I came to Madison in 1976, I really entered the scholarly field of teacher education for the first time. My task here was to work with others in studying our elementary teacher education program and engaging in program development. In fact, when I came, the faculty in elementary education had made a commitment to allocate some resources to sponsoring studies and to use elementary teacher education as a laboratory for the study of teacher education. Bob Tabachnick and I worked together during these first years and that's how I began writing about teacher education.

JP **What experiences have you had in building education programs—are your current programs an outgrowth of your past experiences?**

KZ During my last semester at Syracuse University, I became the director of a new urban teaching center coordinating preservice and inservice offerings in six elementary schools. I've always wanted to stay in a school system. I wanted to be a principal, to take a school and see what I could do with it. But this position at Madison was an unusual opportunity because it was a job in higher education that offered a lot of work with schools. My responsibilities involved coordinating student teaching, and I'm still doing that 15 years later. I've had opportunities to get out of it, but I want to do it.

Another part of my work is program development and research, and with that is the teaching of supervision courses and graduate courses in the study of teacher education. I needed to be, and still feel the need to be, action oriented. I need to be involved implementing programs and involved with schools. So in that sense, there is a clear connection between my current work and my past.

JP **Your master's degree, the MAT in Urban Education, that's an expression and a continuation of this theme, right?**

KZ Right. It was a program at Syracuse University designed specifically to prepare teachers for urban schools and they placed most of us in the core inner city schools. It was a real intensive program, two summers and an academic year.

JP **And your new MAT at Madison, that's also in teacher preparation for urban schools?**

KZ Yes, we're designing a program similar in many ways to the one I was in as a student. I really feel that teacher education generally does not pay enough attention to preparing people for urban schools. I know that a lot of teacher education students nationally don't want to go into these schools, they don't want to work with students who are different from themselves, so we're trying in a number of ways to address that problem here.

JP **Let me ask about the present. What are your thoughts about teacher preparation, maybe the way it ought to be done, the way you're trying to do it.**

KZ Over the last 10 years Carl Grant and I have been working very hard on our student teaching program to try to make it more the way we'd like it in terms of preparing more reflective teachers who have a clear sense of what they are trying to accomplish as teachers and are able to articulate it. We've been writing about the use of "reflective teaching" to describe the thoughtfulness and purposefulness that we want to help our students develop. And for the last few years we've been trying to develop a more coherent elementary program, rather than just focusing our efforts on student teaching. The preparation of thoughtful teachers who take responsibility for their own professional development is one critical area. Another that I mentioned earlier, is the preparation of teachers who are willing and able to teach everybody's children and not just children like themselves.

I think we've had a lot of success in building some of these themes throughout the whole program. Right now we are working on some of the limitations in our current program, such as the lack of a community component in the student teaching program. I see our students as still too isolated from the communities and

parents. Even putting them in schools with a lot of cultural diversity doesn't really help them get in touch with what life is like for the kids who are different from themselves because they don't live in those neighborhoods and have very little contact with parents. They come in during teaching, and they leave at night, often with very little contact with the community. So, we're trying to design a component where students do some work in the community. Its purpose is also to get at the development of social responsibility which I think we do a very poor job of in teacher education programs. The research I think is pretty clear that teacher education is such a minor intervention in teachers' lives that it's very discouraging sometimes; so we're really trying to, in a lot of ways, increase the power of our influence on students. One of the ways to do that is to help students confront some of the problems of our society firsthand and to interact with people who have very different backgrounds and life experiences from themselves.

JP **Two parts of your past and your present as well that you've referred to are reflection and also action research. Would you explain why both are important to you personally and in teacher preparation as well?**

KZ It's always been important to me that the people who are responsible for implementing changes play a large role in designing and conceptualizing changes. I've always been resistant to the idea of somebody coming in and handing down educational reform, somebody coming in with the latest package. I can think back when I was beginning in Teacher Corps as a team leader, being "trained" in certain supervision methods and rebelling. In fact, we got in trouble several times. A group of us went off to Harlem one day and disappeared from this Teacher Corps workshop, and we were reported to the National Teacher Corps Office in Washington. We left the training because it was a prepackaged, pretest/posttest kind of thing. The program didn't value any knowledge that any of us brought to the situation. So I've always been of the belief that the people involved in reforms need to play a large role in conceptualizing them and implementing them and that "experts" need to be at their service.

The action research idea of reform, I think, values the knowledge that practitioners have and that's very important. It enables them to be reflective about their teaching, about their schools. There's a lot of evidence in the literature about the failure of people coming in and trying to design or dictate reforms from above. And as a teacher educator, I try to do the kinds of things that we want our student teachers to do; we're all studying our program and we're always having supervisors doing action research on their supervision so that the whole program has to operate in that way. You can't take reflective teaching or action research and deliver it to someone as a final product as some have tried to do.

JP **Continuing the idea of reform of teacher preparation what is your reaction to state level reforms and where they are headed and their potential for positive change?**

KZ I think that the state level is the most significant level right now. I see signs nationally that are promising, calls for the deregulation of teacher education and for allowing teacher education programs to have some flexibility in figuring out ways to accomplish broader goals rather than the specification of discrete, very specific standards. There are many problems with these specific standards such as the ones we have in Wisconsin. The main one is that the specification of so many credits restricts the programs and their ability to design some innovative approaches. The main effect of more requirements is to further stifle creativity in teacher education.

Probably the biggest problem in teacher education right now is the growing gap between who the teachers are and who the students are. My recent search of the literature on preparing teachers for diversity shows some things going on, but not a whole lot when you consider the enormity of the problem. So that's clearly an area where some incentives need to be provided for some creative work. I think that's what federal policy should do, as was done in the past, to encourage people to move in certain directions. States really need to back off from detailed prescriptions and provide incentives for institutions to develop creative ways for tackling some of our most pressing problems such as preparing teachers to teach children who have different backgrounds from their teachers.

JP **You mentioned the return to action research. Would you expand on the relevance of action research and how it meets your program needs?**

KZ For my doctoral qualifying exam I had to do an action research project. Along with the written portion of the exam I went into a school and worked with several teaching teams that were in conflict with each other. I designed a program to help them begin to work out some of these differences. A lot of the classes that I took in my graduate program were based on an action research model,

(continued on page 20)

with a strong experience base, and I think a lot of the teaching I do now uses that approach. I do a lot of engaging people in experiences and the analysis of those experiences. I see a real parallel between the way that I teach now and the way I was taught in graduate school.

Action research involves a rejection of the hegemony of the university, empirical-analytic model of research—and a commitment to the idea that knowledge can be generated by practitioners, that there's theory embedded in practice. It's not merely transferring a theory of the university to the practice of the schools.

I think it really has been a problem for me all along, this idea of staff development being conducted as if teachers didn't know anything and nobody ever trying to find out what they do know. You get some dynamic speaker who can get people all excited and that's considered good staff development. And nothing ever changes/and we keep seeing over and over again the pattern of one program after another with little-lasting change. I did a lot of work as a graduate student trying to understand why organizations change, and it certainly is not by those dominant models of staff development that are still unfortunately with us today.

JP **A part of my question asking you to talk about action research is perhaps to lend your perspective on the issue of where qualitative and quantitative distinctions might be made.**

KZ I don't think it's so much a matter of quantitative versus qualitative. In fact, I use quantitative approaches myself when its appropriate. I think that distinction is misplacing the debate. The issue is that there is a tremendous amount of expertise at the school level, at the classroom level, that if we're going to deal with some of the problems we have, we have to tap into that expertise.

Teachers feel the lack of respect by people, say at the central office level, for what they know and what they can do. There's a real wealth of expertise that you have to tap into if you're going to deal with any of these problems that we have. That's part of the power of action research.

I think action research can be dangerous though because it can become too self-contained. We might reject anything from the outside or anything anybody's ever learned before. We have to be careful about that. I think the recent research that teachers are doing is more qualitative than quantitative. The emergence of narrative inquiry and autobiographical research methods in education are two recent developments. But you can still use qualitative research methods and still not have action research. I've seen the use of qualitative research that still shows a lot of disrespect for teachers, knowledge. I think you can get at a lot of things through qualitative research that you can't get at through quantitative. But quantitative research can also be very powerful. So, one of the central issues for me is the respect for the knowledge that teachers and other practitioners hold in the research we do.

When we talk about the "knowledge base" for teacher education, there's no reference to anything that teachers have ever written. There's been a huge explosion of teacher research as well as the official "knowledge base" of AACTE and the two don't intersect anywhere. I think that's a major problem for the field right now; to begin to recognize that there are different sources for the "knowledge base" and to acknowledge the practitioner contributions to this "knowledge base." Action research legitimates the idea that people who work in school settings can produce knowledge, can learn some things that others can benefit from, and can generate theory from practice.

JP **One of the charges about teacher preparation that's been levied in the not too distant past has been that it's basically atheoretical. From your perspective, are those days over? Do we have a multiple theoretic perspective of teacher preparation?**

KZ First of all, we have to be suspicious of most of the claims about what teacher education is like because very few people have actually looked at what goes on in teacher education programs. Several of us from the National Center for Research on Teacher Education conducted case studies of 11 programs around the country. Before we began our research we tried to look at the work of other people who had gone into programs and actually sat in on classes and interviewed faculty members. There wasn't that much that had been done. I studied teacher education at the University of Florida for three and a half years, and I'm still cautious about what I say about it, because it changes all the time. So, I think that's a problem with characterizations of teacher education. Most of what is said about teacher education programs in the literature is not based on the experience of actually studying programs.

More and more people are trying to develop more coherent programs, to pick some theme such as reflective teaching, in part, because NCATE's pushing people to do that with their new standards. So, on the surface there appears to be more of a theoretical grounding for teacher education programs.

However, I don't really think that's the case underneath the surface. A term like "reflective teaching" means nothing to me anymore, absolutely nothing given the work that I've done over the last two years in looking at different conceptions of reflective practice that exist in teacher education programs. You can find the whole range of beliefs about teaching, learning, schooling, and social order represented by people using the language of reflective teaching, action research, inquiry and similar terms. So, I don't know if there's the coherence underneath the surface that there appears to be.

My thinking right now is that there are various traditions of reform, or traditions of practice, that are reflected in teacher education programs, and my position is that individual programs reflect a certain pattern of resonance with those traditions. There's no program that's a pure x or y, but the different traditions; academic, social reconstructionists, developmentalists, and social efficiency; represent different aspects of teaching expertise.

I think our tendency has been to segment people and programs into little boxes. I think there are some issues that are prioritized and that are focused in all these traditions, so I don't see any sort of single theory or single approach dominating programs because there are very few programs that have one person or theme that can dominate them. Anytime you have a group of people, you have a variety of things going on, and you always have to deal with different aspects of teaching expertise. You can't just pay attention to issues of social justice and inequities as people sometimes portray me as doing. That's just not true. It's just that I also raise those issues. I may raise them fairly loudly because they tend to get marginalized.

So we need to start talking across these boundaries, that we have set up in our field. I see the boundaries as a real problem. It was amazing. I was on this session at AERA last year with people from a number of programs, and this is where I did this paper on the development of social responsibility in teacher education. When I talked about teacher education programs in terms of all four traditions, it was amazing how we began to see the commonalities across the programs represented in our symposium. The image was, for example, that at Berkeley they're developmentalists and at Wisconsin they're critical theorists. We began to see a strong developmentalist strand in both programs and how the teacher educators at Berkeley are beginning to pay more attention to issues of diversity. So, I don't think that you can segment programs into mutually exclusive categories. To get back to the original question about teacher preparation being theoryless, I think it's again more of a reflection of biases of those outside the field than those that work in the field. Once you actually get closer to programs, you can see a variety of theoretical and political commitments embedded in them.

JP **Let me move to my next question and that's about the future. What lies ahead in terms of research strategies and knowledge production?**

KZ I think there have been things that we've learned through the so-called official knowledge base that AACTE and others talk about. But the future; there are so many teachers right now getting involved in some form of research on their practice, whether it's autobiographical, narrative, or case study. There's going to have to be a greater place for this work when we talk about knowledge base for teacher education. We can't just keep going on pretending that universities alone will somehow, through better research methods and more funding, produce better teacher preparation and schooling.

If you talk to any group of teachers about educational research as we know it, it is not seen as very influential. However, once you get them engaged in researching their own practice, you can't stop them. It's a very powerful sort of experience. I think that's where the future is—in a knowledge base for teaching that includes practitioner-generated knowledge.

I also see a further broadening of methodological inquiry in the future—we're seeing narratives and autobiographical and life history methods being used a lot now. This is broadening what's viewed as acceptable educational research. I can see it going on here at Wisconsin with some new people on our faculty whose area of expertise is in narrative inquiry and they write stories. A number of my colleagues are struggling with whether this is real research or not, and I can see this broadening of what people are willing to accept continuing.

The rejection of quantitative research I think is a dangerous mistake. We have people on our faculty here who argue very persuasively about the kinds of sophisticated things you can do with quantitative methodologies to gain understanding in ways that you can't with certain qualitative ways. So, I'm not saying, I want research to be just qualitative, just storytelling, but more of an acceptance of different methodologies I'd rather focus on the problems that people are doing research on and whether they're worth researching or not.

JP **One final question—what issues in teacher education research concern you?**

(continued on page 29)

Dropout Rates: Current Estimates are Too High

By George H. Olson, Appalachian State University

Abstract

Large school districts typically report dropout rates in the neighborhood of 15 to 20 percent, when computed annually, and as high as 40 to 50 percent, when computed for cohorts over several years. It is argued here that these rates are spuriously high; that they stem from problems in the way dropouts are operationally defined, and problems in the pupil accounting procedures employed in counting dropouts. When considerable extra effort was extended to more accurately account for the whereabouts of students officially classified as dropouts, one school district found that large percentages of their dropouts could be reclassified as matriculating somewhere else. The new accounting procedure changed the annual dropout rate from 16 percent to 4.3 percent.

Media headlines in recent years have insinuated a dropout *crisis* with reports that our nation's youth are quitting school in record numbers. It is not unusual to see headlines proclaiming that as many as 25 percent, 40 percent, even 50 percent or more of our students are leaving school prior to graduation. Such statistics have not been the invention of the media. In 1985, Samual Peng authored a paper for the Business Advisory Committee of the Education Commission of the States in which he estimated the national dropout rate at 25 percent. Within the nation's urban school districts the rate was put at 50 percent. Virtually identical statistics were reported in a study conducted by the Government Accounting Office (GAO, 1986). At about the same time, Hess and Lauber (1985) reported the dropout rate among inner-city Chicago schools to be more than 50 percent. These three studies (and a few others) received considerable coverage in secondary reviews. Additional support for high estimates of dropout rates has come also from research reports issued by large school districts (e.g., Horst & Donahue, 1988; Olson, 1988a).

Reports published in recent years have demonstrated, adequately, that dropout rates are highly suspectable to vagaries in the ingredients going into their computation (Horst & Donahue, 1989; Ligon, Stewart, & Wilkenson, 1990). These and other studies have shown that dropout rates can vary, often markedly, as a function of such factors as the time frame employed (annual, or longitudinal); the range of grade levels included (grades 9-12, 7-12, K-12); the type of student accounting procedure used (average daily membership, average daily attendance, or all students ever enrolled); and the point in time when the count is concluded (early in the fall semester vs. the end of the spring semester).

Rates based on longitudinal (cohort) analyses will always yield larger rates than those based upon annual counts (Stephenson, 1985). Because the likelihood of dropping out increases with age, high school rates (grades 9-12) will nearly always be higher than secondary rates (grades 7-12) which in turn will be higher than district rates (grades K-12) (Olson, 1988b). The student accounting procedure employed is particularly influential because it determines the number of students comprising the denominator of the rate being tallied (Ligon, Stewart, & Wilkenson, 1990). Using average daily attendance (ADA) will generally yield a smaller count, hence a larger rate, than will average daily membership (ADM). Still lower dropout rates will be obtained by including in the denominator all students ever enrolled within the time frame analyzed.

Other factors that can dramatically affect the computation of dropout rates include the choice of definition of *dropout* (Ligon, Stewart, & Wilkinson (1990); Olson, 1988b) and poor record keeping (LeCompte & Goebel, 1987). Still other, more subtle, factors have been identified by Horst and Donahue (1989).

To be fair it should be pointed out that nearly all the sources of high (40 percent or more) dropout statistics mentioned above included conscientious discussion of many of the problems involved in estimating dropout rates. In virtually every study cited it was pointed out that the high rates resulted from a cohort analysis spanning four or more years. Readers were cautioned that such rates are usually confounded with attrition rates. Furthermore, most of the studies reported annual dropout rates that were much lower than the cohort rates, as expected.

Yet the general perception persists that dropout rates are soaring. When the nation's press reports the results of dropout studies it tends to report only the highest figures available without concomitant explanation concerning how the statistics were computed or what they actually mean (Horst & Donahue, 1989). Thus the public (politicians included) is informed simply that this or that district's dropout rate is in the neighborhood of 50 percent, a figure that in turn ends up being interpreted as an annual rate—half the students are dropping out each year (Tugend, 1985).

The objective of this paper is to help quell the misperception that one-fourth to one-half of our high school students are quitting school prior to graduation. The premise is that much of the confusion is due to difficulties in student accounting and record keeping. This paper reports the results of two studies, recently conducted in Dallas, that give credence to this thesis. Before reporting the results of those studies, however, the reader may find it interesting to see the effect on dropout rates of a rather simple improvement in student accounting procedures.

The Effect of Improved Student Accounting Procedures on Dropout Rates

In 1987 the Texas legislature enacted into law new requirements for reporting dropout statistics beginning with the 1987-88 school year. In particular, a *dropout* was defined as any student:

1. who does not have a high school diploma,
2. who is absent for 30 or more consecutive days, and
3. whose attendance at another public, private, or parochial school within the 30-day time period cannot be established.

An additional requirement was that students who failed to return to school in the fall when expected were to be counted as dropouts from the school they had attended the previous spring.

At the beginning of the 1987-88 school year, the Dallas school district had no formal procedure in place for centrally collecting requests for transcripts to establish attendance at another school. Consequently, the district was unable to exclude these students from dropout counts until the following year, 1988-89, when procedures for collecting such information at the school level and for coding the information on the district's centrally located computer database were developed and implemented. In all other respects, the district's accounting procedures agreed closely with those newly mandated by the state. Once the new procedures were installed, however, the result was striking. For several years prior to 1988-89 the district's official annual high school dropout rate had hovered in the neighborhood of 19 to 21 percent. For 1988-89 the rate dropped five percentage points to 16 percent. Virtually all the improvement could be attributed to the new accounting procedures. Before these procedures were used, students who transferred to other school districts without having first informed their old school of their intentions were coded as withdrawn "for reasons unknown." Since the district had no (collected) evidence of their matriculation elsewhere these students had to be counted as dropouts. The new system for recording incidences of requests for transcripts netted nearly a 24 percent reduction in the official dropout rate the district was required to report to the state education agency. In the next section we will see that, given enough resources, additional improvements in accounting for withdrawn students' whereabouts can net much greater reductions in dropout rates.

Two Studies to Determine the Actual Status of Students Officially Classified as Dropouts

In 1988 the Dallas school district initiated two projects aimed at returning dropouts to school. The first effort, known locally as the No-Show Recovery Project, targeted students who did not return to school as expected in fall 1988 following summer vacation. The second effort, generally called the Fall Dropout Recovery Project, was aimed at students who left the district during the fall 1988 and for whom no evidence was available that suggested they had not dropped out. While the primary focus of these two efforts was to reenroll dropouts, the studies afforded an excellent opportunity to obtain typically unavailable data on the whereabouts of students classified as dropouts.

Target Populations

For the No-Show Project, 7,105 secondary school no-shows were identified by scanning the district's computer database at the end of the second week in September 1988 for secondary-school students listed as having not yet returned to school. Excluded from this group were students for whom withdrawal codes indicated they had not dropped out of school but were either attending school somewhere else or were not returning for reasons of health.

Students targeted for the Fall Recovery Project were those identified on the district's database as having been enrolled in a district school by the end of the second week in October (six weeks following the beginning of the school year) and as no longer attending school by the middle of February 1989 (three weeks into the spring semester) for a withdrawal reason that could not exclude them from being classified as a potential dropout. This resulted in 3,400 students being identified as dropouts.

Procedures

Although the district's primary objective in mounting the effort described in this paper was to locate students who had dropped out of school and to encourage them to return, the focus of this paper is to illustrate the effect an extraordinary effort in pupil accounting had on a school district's dropout index. For this reason, detail on the procedures the fieldworkers used to encourage the return of dropouts are not provided. Instead, because they *are* relevant to this paper, only the procedures used to collect and analyze data are described below. The procedures were essentially the same for the two projects.

Data Collection Instrument. The district's computer was used to generate rosters of no-shows and dropouts by school. These rosters were designed to serve also as an instrument for data collection. Thus, in addition to providing target students' names, addresses, and other demographic information, the rosters provided a response protocol for data collectors on the search teams (see below) to record the current dropout status of those students they were able to locate. Thus, for each student identified as a member of a target population, a fieldworker was to assign the student to one of the 10 categories given in Table 1 (see page 24). The rosters also included a space for data collectors to record comments and observations.

Search Teams and Data Collection. In both studies secondary school principals were instructed to utilize their local

(continued on page 24)

Table 1

Categories Used for Assigning No-shows and Fall Dropouts

1. *Not Located* (NotLoc): Used only when all attempts to locate the student were unsuccessful.
2. *Private School* (PrvSch): Assigned when it was learned that a student was currently attending a private school.
3. *Alternative School* (AltSch): Used for students known to be attending an alternative educational program other than a recognized public or private school.
4. *Public School* (PubSch): Assigned when a student was known to be attending a non-district public school.
5. *Moved Out* (MovOut): Used for students no longer living in the area served by the district when it was not known whether the students were still attending school.
6. *Dropped Out* (DrpOut): Used only when it was learned that a student, voluntarily, was no longer attending school and had not graduated.
7. *Pushout* (PshOut): Assigned for students who were suspended, expelled, incarcerated, institutionalized or otherwise involuntarily forced out of the educational system.
8. *Health/Death* (HthDth): Used when it was learned that a student was no longer attending school due to illness, or because he or she had died.
9. *District* (DSTRCT): Assigned when a student was found to be attending school elsewhere in the district.
10. *Other* (OTHER): This final category was used as a catchall when none of the other categories applied.

staffs in making an initial attempt at classifying the students identified on their schools' rosters. These individuals were to use whatever means of obtaining information they had at their disposal including telephone inquiries and personal contacts. It was expected that the bulk of the work of accounting for students' whereabouts would be accomplished at this stage. Additionally, personnel from several central offices were made available for more extensive field efforts in locating students not accounted for in the school's initial attempts.

Preparation and Training. Special meetings were held for principals to explain the purpose of the data collection and recovery efforts and to stress the importance of the project. Principals were shown examples of the data collection instrument (i.e., the rosters) and provided an explanation of the categories. Also, principals were asked to utilize their own staffs in attempting an initial determination of their target students' current classifications. Finally, principals were told that additional personnel would be contacting them to help in classifying those students that remained unclassified.

Additional training meetings were held for the extra-school personnel recruited from various central offices. The purposes of these meetings included orientation, instruction on filling out the response instrument, procedures to be followed when making house calls, and school assignment.

Follow-up Database Searches. The district's student database was searched several times following the initial searches in which the target populations were identified. The primary purpose of these additional searches was to monitor the effectiveness of the recovery efforts. The follow-up database searches also afforded the opportunity to correct some errors in coding that might otherwise have gone undetected. For instance, following the data collection periods, several of the students in the target populations remain not classified. However, on subsequent searches of the district's database many of these students were found in attendance at other district schools. On the basis of these searches these students were assigned to the category, DSTRCT, an indication that the students had returned to school. In other instances, students assigned to one of the other categories were later also found to be in attendance at a district school. These students were similarly reclassified as belonging to the DSTRCT category. Thus, wherever possible, the responses recorded by the data collectors were corrected on the basis of follow-up database searches.

Results

The efforts to locate, document, and recover no-shows and dropouts were mounted on a large scale. In addition to the numerous local school staffs that worked on the projects, approximately 100 central-office personnel were involved in collecting data out in the community. Most of results from the two projects have been summarized in Table 2.

Table 2

Summary of the Results of Attempts to Recover Assigning No-shows and Fall Dropouts from the Fall Semester

	No-shows		Dropouts	
	N	%	N	%
Initially Identified	7,095		3,400	
Returned to School	1,829	25.7	630	18.5
Officially Counted as Dropouts	5,276	74.3	2,770	18.5
Classification of No-shows and Fall Dropouts				
MovOut	914	17.3	511	18.4
NotLoc	2,111	40.0	439	15.8
OTHER	229	4.3	18	0.6
PrvSch	255	4.8	38	1.4
AltSch	118	2.2	136	4.9
PubSch	1,098	20.8	674	24.3
PshOut	47	0.9	94	3.4
HthDth	48	0.9	15	0.5
DrpOut	456	8.6	845	30.5

Dropout Rates *(continued)*

No-show Recovery Project

Of the 7,105 summer no-shows originally identified, only 300 of them, or 4.2 percent, remained unclassified at the end of the no-show recovery period, while 348 of those who were classified were found to be in attendance at a school different from the one to which they had been assigned. The fieldworkers assigned these students to the DSTRCT category. Additionally, 1,481, or 20.8 percent of the no-shows originally assigned to various other categories, by the data collectors were later reassigned and added to the DSTRCT category on the basis of follow-up database searches. Most of these reassignments (89.1), however, were for students originally assigned to the categories NotLoc, MovOut, and OTHER. Thus the follow-up database searches were effective in locating or correctly categorizing a large portion of the no-shows whose whereabouts had gone undetermined by the search teams.

Recovery Efforts

As mentioned earlier, the major thrust of the two projects was to recover dropouts. From the top part of Table 2 it appears that these efforts were at least moderately successful. By the end of their respective recovery periods 25.7 percent of the no-shows, and 18.5 percent of the fall dropouts, had returned to school. However, comparative data from the previous year suggested that these results were not as strong as they first appeared. On October 4, 1988 (when the no-show recovery project was concluded), the no-shows remaining comprised 9.1 percent of the district's unexpected secondary school enrollment. By comparison, one year earlier the number of no-shows comprised 9.8 percent of the expected enrollment. Thus, while the difference was statistically significant ($z = 3.97$, $p < .0001$), it can be concluded that the no-show recovery effort resulted in only minor practical improvement in the rate of returning students over that observed a year earlier when no special effort was attempted.

The results of the effort to recover dropouts appeared more encouraging. By the first week in May 1989, 630 (18.5%) of the dropouts identified in the fall project had returned to school. By comparison, of 4,100 first semester dropouts identified a year earlier, only 350 (8.5%) had returned to school by the first week in May.

Classification of No-shows and dropouts. Apart from the district's primary interest in recovering dropouts, these studies provided valuable information concerning the actual classification of students otherwise officially classified as dropouts.

In spite of their extraordinary effort, the data collectors were still unable to account for the whereabouts of nearly two-thirds of the no-shows and about one-third of the fall dropouts. Even so, although not actually located, appreciable numbers of these students were determined to have moved away from the district's jurisdiction (17.3% of the no-shows and 18.4% of the potential dropouts were classified MovOut). Nearly 28 percent of the no-shows and more than 30 percent of the fall dropouts were determined to be attending a non-district school (PrvSch, AltSch, or PubSch). Only 8.6 percent of the no-shows, but more than 30 percent of the potential dropouts, were categorically classified as having dropped out of school (i.e., classified DrpOut).

The fact that the whereabouts of such a large portion of students (i.e., those assigned to the MovOut, NotLoc, and OTHER categories) was not satisfactorily determined was cause for concern. However, without additional information on the matriculation status of these students, it may be reasonable to assume that they were attending/not attending school in proportions similar to those for whom this information was available. In other words it may be reasonable to assume that these students were distributed proportionately to those classified into the remaining categories. Applying this assumption, more than 70 percent of the no-shows, and more than 44 percent of the fall dropouts, were estimated to be attending school somewhere else (see Table 3). As for the students reclassified as having actually dropped out (DrpOut), the rate among summer no-shows was estimated at 22.5 percent, and among fall dropouts, at 46.9 percent.

Table 3

Classification of Students Following Redistribution of Those Students Whose Whereabouts Remained Undetermined

	No-shows		Dropouts	
	N	%	N	%
PrvSch	665	12.6	58	2.1
AltSch	308	5.8	209	7.6
PubSch	2,865	54.3	1,036	37.4
PshOut	122	2.3	144	5.2
HthDth	123	2.3	23	0.8
DrpOut	1,189	22.5	1,299	46.9

Note: In this table the 4,222 no-shows and summer dropouts previously classified MovOut, NotLoc and OTHER have been redistributed proportionately among the remaining categories.

Revised estimates of the district dropout rate. This redistribution can be used to derive a new estimate of the district's 1988-89 actual dropout rate. On October 4, 1988, early into the fall semester, the district's expected secondary school enrollment, including the no-shows, was 58,182 students. A conservative estimate of the number of actual dropouts was 1,301 students (456 no-shows plus 845 fall dropouts), or a rate of 2.24 percent. This estimate was conservative in that it can be assumed that some of the students in the undetermined categories (MovOut, NotLoc, and OTHER) had also dropped out. A more liberal estimate can be derived by assuming proportional distributions

(continued on page 26)

in the undetermined categories. There the total number of actual dropouts would be estimated at 2,488 students (1,189 no-shows and 1,299 fall dropouts) yielding an estimated 1988-89 dropout rate of 4.28 percent. These two estimates, 2.24 percent and 4.28 percent, can be compared with the officially reported rate of 16 percent.

Discussion

The results presented above need to be considered from several perspectives. On the one hand, they are in obvious contradiction with the results of several other studies that have appeared over the last several years. At a minimum the results call into question the very high estimates of dropout rates that are often cited. Additionally, the results raise questions concerning the feasibility of including summer no-shows in counts of dropouts.

Should No-shows be Counted as Dropouts? In their guidelines for reporting dropout statistics, the Texas Education Agency has stipulated that no-shows (i.e., students who fail to enroll during the fall semester as expected, and whose whereabouts cannot otherwise be determined) are to be counted as dropouts. For large school districts with large numbers of no-shows, high rates of student mobility, and complicated procedures for tracking students, this stipulation may be unfair. As the studies reported here have clearly shown, many if not most students listed as no-shows can reasonably be assumed to be attending school elsewhere. Another large percentage of those students listed as no-shows during the first few weeks of school eventually are found in attendance. The sheer numbers of no-shows at the start of an academic year places a considerable burden on record-keeping mechanisms. It may be impossible for large school districts, without adopting the extraordinary effort expended here, to adequately account for all its no-shows. The penalty is a spuriously high dropout rate.

Should students who move out of the area be counted as dropouts? Beyond the problem of counting matriculating students as dropouts is the problem of jurisdiction. Should districts be held accountable for students who move out of their service areas? Apparently under Texas regulations they are. Thus, in Dallas, under a conservative estimate, as many as 17 percent of the no-shows and 18 percent of the potential dropouts were counted as official dropouts simply because their families choose to move away from the district's jurisdiction over the summer without notifying their children's schools.

In a recent district report citing dropout indices, Babu (1989) reported several statistics, all of which were components of the official secondary school dropout rate required in state reporting guidelines for 1987-88. The overall dropout rate given there was 22.2 percent of which no-shows accounted for a little more than a third (36%). If the liberal estimate for the true dropout rate among no-shows (i.e., 2.04%) were applied to the computation in that official report, the dropout rate reported there would have been attenuated to 16 percent. If, in addition, the liberal estimate of the dropout rate among potential dropouts (i.e., 2.23%) were employed, the official rate would have been reduced further to only 8 percent.

What is the District's True Dropout Rate? Readers familiar with the high dropout rates reported elsewhere may be troubled by the relatively low estimates obtained here. Those readers may question the procedure adopted here of allocating only a proportional share of those students originally classified as NotLoc, MovOut, or OTHER to the DrpOut category. For one reason or another, they may feel that more students should have been allocated to this category. Additional data from the studies, however, tended to support, or at least not refute, this manipulation of the data.

As mentioned earlier, the data-collection instruments contained a space for the data collectors to record comments and observations. In their training meetings, they were encouraged to make generous use of this space. Accordingly, most of the responses were accompanied by comments. A perusal of the comments recorded for those students classified as NotLoc revealed that in the two-thirds of the cases where comments were made, the most frequent comment was "moved." Less frequent, but still common, were the comments, "vacant house" and "no answer." Among the variety of other comments few were given that would imply, directly, that the student had dropped out of school. Indeed, the overall impression obtained from the comments accompanying students classified as NotLoc was that most of these students, along with their families, had moved, leaving no readily available forwarding address.

In contrast, nearly all the responses for students classified MovOut were accompanied by comments indicating that these students, again along with their families, had moved out of the district's attendance area. In no case did the comments suggest that a student had dropped out of school. On the other hand, nearly all those assigned to the OTHER category had comments that erroneously placed them in other district schools (the follow-up database searches established that they were, in fact, not attending district schools).

It must be noted that assignment to these categories was based upon whatever information, direct or indirect, could be gleaned from a variety of sources including fieldwork in the community. In most cases it appeared that the only thing that made a difference as to whether a student was assigned to NotLoc or to MovOut was that in the latter case the data collector was told, or otherwise was able to determine, that the student's family had moved to another city. It seems reasonable to assume, therefore, that the students assigned to these two categories, NotLoc and MovOut, were similar. They were students who had moved away and were probably attending schools (or not attending any school) in proportions equivalent to those whose residence remained within the district's boundaries.

There may be a less solid basis for treating as similar those students assigned to the OTHER category. The majority of these students were (erroneously) placed in other district schools by the data collectors. Yet they were not found in subsequent database searches. Thus, in effect, they remained no-shows and potential dropouts who could not be located. These students were included in the pool that was redistributed because: it could not be verified that they belonged in any other category, and it seemed reasonable to assume that they would be distributed, at least approximately, like those in the NotLoc and MovOut categories.

Summary

In recent years the nation's media have reported alarmingly high dropout rates on the order of 40 to 50 percent. Such headlines have been fueled by a few serious studies which have reported high longitudinal rates along with lower annual rates on the order of 20 to 25 percent. But even rates of this latter magnitude may be too high, as the studies reported here suggest.

A relatively simple change in accounting procedures, keeping a record of requests for student transcripts, can yield a remarkable decrease in a school district's annual dropout rate. Additionally, if a district is willing to expend the time and energy required to obtain more detailed information on the whereabouts of students who withdraw or fail to return to school following summer vacation, they are apt to find that many of those presumed to have dropped out are most likely attending school elsewhere. At the very least, they will find that many of the presumed dropouts have moved away from the district's service area.

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The Role of Knowledge Versus Beliefs in Improving Educational Practice

By Jack Snowman, Southern Illinois University

Teaching education and psychology courses to undergraduate and graduate students is, as many of you know, a challenging task. The behaviors that are the focus of these courses are complex and are influenced by a variety of factors. To help students better understand the complexity of human behavior, particularly as it occurs in educational settings, we encourage (and require) them to become familiar with the research literature. But this usually creates another problem since the research literature on many topics contains inconsistent, if not contradictory, findings. How, students ask, can progress be made in improving classroom learning when researcher A finds a strong positive effect for a particular treatment (mastery learning, for example), researcher B finds a weak positive effect, and researcher C finds a moderate negative effect? Although I am as uncomfortable as they are with the "messiness" such findings produce, I point out that inconsistent results are the norm in educational and psychological research because of the complexity of the topics we study. This complexity leads researchers to examine the effects of different variables and combinations of variables, to measure these variables in different ways, and to conduct experiments under different conditions. As a result, one develops a tolerance for ambiguity and a penchant for drawing tentative conclusions or else one finds a new line of work.

Imagine my excitement, then, when I can introduce a topic and state that the research findings are in such close agreement that the implications for practice are particularly clear and compelling. While this does not occur often, it seems to be true for the practice of grade retention (requiring a student to repeat a grade the following year for unsatisfactory academic performance). Virtually all of the research that I have seen on this practice indicates that low-achieving children who are promoted learn more the following year, have a stronger self-concept, and are better adjusted emotionally than similar children who are retained. Now imagine my disappointment when I find that grade retention is still a fairly common practice. Why educators engage in a practice that is clearly not supported by the evidence and what might be done to bring educational practices more in line with research findings are two issues that I would like to briefly explore in this article.

Grade retention has long been used as a way of dealing with individual differences in learning rate, emotional development, and socialization skills and is still fairly prevalent. In the October 1987 issue of *Phi Delta Kappan*, Mary Lee Smith and Lorrie Shepard estimate that 15 to 19 percent of all schoolchildren in the United States are retained in any given year. Similar retention rates can be found in Haiti and Sierra Leone. By contrast, the Japanese educational system has a retention rate of less than one percent. Tom Schultz reported in the October 1989 issue of *Phi Delta Kappan* that district-level retention rates in California elementary schools ranged from zero to 50 percent.

According to Smith and Shepard, this practice persists because many educators subscribe to one or more of the following mistaken beliefs:

1. Retention allows students to excel academically the following year, thereby preventing retention later on, and is free of cost and risk. These beliefs are typically based on personal experiences with a small number of children, limited follow-up, and no knowledge of the fate of similar children who were promoted. Controlled studies with large representative samples of retained and nonretained children clearly show that the effects of retention are seldom positive.

2. Certain children have not developed sufficiently intellectually, socially, and emotionally to profit from normal classroom instruction. In addition, they believe that changes in the curriculum or in the teacher's instructional methods are not likely to be of much help. The child simply needs time to mature. Research on peer tutoring, cross-age tutoring, and computer-assisted instruction suggest otherwise.

3. Children should learn more and learn it sooner. According to this view, the purpose of kindergarten is to master basic literacy and numeracy skills in preparation for more advanced work. Children who cannot keep up become candidates for retention (instead of the curriculum becoming a candidate for change). Research on cognitive development casts doubt on the benefits of pushing five- and six-year-olds to master too many aspects of reading, writing, and arithmetic.

4. Instruction is more efficient and effective when classrooms are made up of children who are more alike than they are different. Retention is viewed as one way of producing more homogeneous classes. Research findings on the effects of this type of ability grouping (often referred to as between-class ability grouping) are largely negative.

Beliefs about retention are, of course, modifiable. Just how modifiable was a question that Roy P. Doyle addressed in the November 1989 issue of *Phi Delta Kappan*. Doyle asked elementary school teachers, community leaders (parents holding leadership positions in the local parent/teacher organization and members of the local Rotary Club), and undergraduate education majors in a small Arizona town to indicate on a five-point scale how strongly they subscribed to the following retention-related beliefs (the lower the rating, the stronger the belief):

The Role of Knowledge *(continued)*

1. Retention produces more learning the following year than nonretention.

2. Retention in lower grades produces more homogeneous classes in upper grades.

3. The prospect of retention motivates students to higher levels of achievement than they would attain if promotion were based solely on a student's age.

4. The use of "social promotion" is a major factor contributing to low achievement in Arizona's public elementary schools.

5. An eighth-grade diploma should certify that some minimum level of achievement has been attained.

6. Promotion to the next grade is a reward for accomplishment and should be earned.

Doyle then made a presentation to each group in which he used several lines of research evidence to argue against the practice of retention. Specifically, he pointed out that retained students are more likely to subsequently drop out of school than nonretained students, that the normal range of learning ability in a typical classroom is so wide that retention in early grades does not produce significantly more homogeneous classes in later years, that nonpromoted students generally learn less than comparable low-achieving students who are promoted, and that children whose academic weaknesses produce a low expectation of success are not likely to be motivated by the threat of retention. Doyle also included information on the frequency of retention in Arizona public schools and the degree of variability in achievement test scores among fifth- and sixth-graders in Arizona public schools. Immediately after his presentation, Doyle reassessed the strength of each group's beliefs.

Doyle's findings were an interesting mix of the expected and the unexpected. The strength of each group's retention beliefs prior to the presentation would probably surprise no one. The community leaders were most strongly in favor of retention (average rating of 2.27) followed by the education majors (average rating of 2.49) and the local teachers (average rating of 2.64). The overall post-presentation ratings were also predictable. The education major showed the greatest shift and were now least inclined to believe in the efficacy of retention (average rating of 3.27). The local teachers did not change their beliefs as much as the education majors and ranked just below them (average rating of 3.07). Although the community leaders were less in favor of retention after Doyle's presentation, as a group they still held the strongest pro-retention beliefs (average rating of 2.84).

The finding that Doyle did not expect was that the post-presentation responses to the first three statements were quite different from the responses to the last three statements. For all three groups there was less of a change in the beliefs associated with the notions of upholding standards (number 4), maintaining the integrity of a diploma (number 5), and earning rewards for accomplishments (number 6) than in the beliefs associated with the actual effects of retention. The somewhat depressing inference that Doyle draws from this logical inconsistency is that it will probably be easier to convince people that retention is harmful than it will be to persuade them to abandon the practice. In light of these findings, we as professional educators need to make our students, colleagues, and parents aware that they may subscribe to beliefs that perpetuate flawed educational practices and urge them to modify such beliefs when the weight of scientific evidence suggests it is necessary to do so.

An Interview with Zeichner *(continued from page 21)*

KZ One thing that concerns me is the fact that much of this knowledge about teacher education is being produced by people who have little involvement in teacher education. We have the same problem in teacher education that we have in teaching where a professional corps of researchers work full time and don't experience the daily grind of teacher education. As a teacher educator, someone who is still involved in the student teaching program, I resent that a lot.

And now we have a whole new group of people coming in and doing teacher education research with minimal teacher education experience. It's very well documented that teacher education faculty are mostly teaching. Their workloads are not comparable to faculty in other areas and in most places that do teacher education, faculty don't have time and access to resources to do writing and research on teacher education. I feel I have to stay involved and remain in student teaching and that once I go away from it I have no right to speak to people in the field about what they ought to be doing. As a practitioner, I feel that I can at least voice my opinion. The separation of research and practice in teacher education is a real problem and meetings like AERA are places where this problem becomes real visible. You really have to have some direct involvement with teacher education programs to be able to speak intelligently about them. The people who spend all of their time traveling around the country telling others what they should be doing, but aren't doing anything themselves, are not really helping things very much.

Membership Expresses Opinions

By Sharon McNeely, At-Large Member of the MWERA Executive Council

In the spring of 1992, a mail survey of our membership was conducted. By early May, 205 responses had been received, a little over one-third of our membership. Those of you who have not yet returned your forms may still do so. I welcome knowing how everyone feels about key issues and hope that the discussion will lead to changes to better meet our members' needs.

The breakdown of those who responded to the questionnaires was: 43 percent females and 56 percent males. Of these, 62 percent had Ph.Ds, 23 percent had Ed.Ds, 11 percent had master's degrees, and 2 percent had bachelor's degrees. Twenty-nine percent were degreed in educational psychology, while 20 percent were in educational administration. Sixty-eight percent reported that college teaching was their primary or secondary job. Thirty-two percent were employed by colleges to do research. Ninety-two percent reported being of caucasian descent. I do not know if these respondents overall were representative of our organization, as this is the first time that we have collected demographic information on our membership.

Table 1

Supported and Rejected Program Changes

Item	% respondents would like to see changed	% respondents would like to not see changed
Implement student paper award	47	7
Identify session type in the program	47	5
Make the Friday lunch optional	44	18
Have roundtable sessions	44	10
Have poster sessions	40	16
Seek sponsors for our coffee	40	11
Have divisional meeting time	40	6
Send receipts for advance registration	37	7
Continue the cracker barrel social	37	5
Add Sunday morning workshops	5	57
Add Saturday afternoon workshops	17	38
Add Saturday afternoon sessions	13	36
Have fewer invited speakers	35	8

Much of the questionnaire was devoted to getting opinions about the annual meeting. Forty-three percent of our membership reported always attending the annual meeting, and another 41 percent indicated they sometimes attend. Eighty-five percent of the respondents agreed that mid-October was a good time for the annual meeting. However, of the 57 percent who do not always attend our meetings, 25 percent indicated that they were unable to attend our annual meeting because of schedule conflicts and other demands on them during mid-October. There was no predominant other time of the year that members preferred to meet.

On the open-ended question soliciting changes in the meeting, there were no suggestions that occurred among more than 3 percent of the respondents. However, when given choices for possible meeting and programmatic changes, support was shown for some changes, while other possible changes were rejected (see Table 1).

When given choices on how we might help future conferences' expenses match income, 59 percent of the respondents indicated that we ought to separately charge for the Friday luncheon. Fifty-four percent said we should limit the invited speakers expenses, and 53 percent supported raising late registration fees. Close to half of the respondents (46 percent) supported raising the regular members conference registration fees, and 41 percent supported raising workshop fees. It should be noted that 35 percent of the respondents reported attending our workshops, with the vast majority of attendees supporting raising those fees. Additionally, 21 percent indicated that they would like help in networking for roomsharing to cut their personal costs.

There were a wide range of open-ended responses as to the type of workshops members would attend. Sixteen percent requested quantitative, statistical, and research method workshops. Another six percent supported assessment-related workshops (instrumentation, updating on test options, microcomputer-based assessments). The rest of the responses were spread among many options. The yet-asked question is if we would increase workshop attendance if we offered workshops at other times during the meeting.

One-half of the respondents reported using the printed abstracts from the meeting, and 61 percent would pay extra ($2) for the abstracts. Only 36 percent reported they would use the abstracts on disk and would pay extra for the disk. Three out of four respondents said they use the guides and other handouts at the meeting. Some computer-literate respondents suggested we have a few computers at the meeting for members to copy abstracts, disks of presenters' papers, get city information, post job listings, allow members to get information to network with others with similar interests, etc. I will look into costs involved for bringing two computers in and insuring them during the conference.

Membership Expresses Opinions *(continued)*

Seventy-three percent of the membership would like major research interests included in the membership listings. Also supported was including E-mail and FAX addresses (both 61 percent) in the membership listings.

Eighty-two percent of the respondents indicated that they would distribute additional programs to the schools and others. Many of those who were unwilling to do so indicated that they did not work with the schools and had no personal contacts. Handing out programs might be an effective way to increase membership and increase conference attendance.

However, a significant raise in conference attendance would be problematic for MWERA in the short-run, because of our contract with the Bismarck Hotel. As we have many new members, it is important for them to know the current benefits MWERA derives from its ongoing relationship with the Bismarck. MWERA has used this hotel for a number of years. In addition to low room rates for members, they provide us free meeting rooms (very difficult to obtain anywhere), and a variety of other amenities. In many hotels we would have no choice but to rent overhead projectors, etc. The Bismarck has been kind enough to let us bring in ones we obtain rent-free from Chicago Public Schools. Only four percent of the respondents indicated we should look elsewhere for hotel facilities.

Speaking of getting new members, when asked how they became members, 62 percent said that their mentor or a colleague told them about MWERA. Fifty-two percent said they joined for the professional networking of giving and receiving information. Another 20 percent reported that they joined MWERA because of the friendliness and collegiality at meetings. Some members responded that we have a much better meeting than AERA. When was the last time you told someone about MWERA? Do it today! We are still the best deal around!

EXECUTIVE COMMITTEE 1991-92

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MWERA DIVISIONS

A. Administration
B. Curriculum Studies
C. Learning and Instruction
D. Measurement and Research Methodology
E. Counseling, Human Development and Special Education
F. History and Philosophy of Education
G. Social Context of Education and Motivation
H. School and Program Evaluation
I. Professional and Medical Professions
J. Postsecondary Education
K. Teaching and Teacher Education

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1991–93

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Mid-Western Educational Research Association

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the mid-western region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome.

The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The *Mid-Western Educational Researcher* is the official publication of the Association. The four issues published annually are mailed to all members. These issues include articles, features, a report on the Annual Meeting, some of the major presentations, the Call for Proposals, and the Program for the Annual Meeting.

The Annual Meeting of the Association is held in the third week of October beginning with presessions starting on Wednesday at noon. The meeting is comprised of papers, symposia, and invited addresses concerning a variety of topics from the various MWERA Divisions. The 1992 Annual Meeting will be held at the Bismarck Hotel, Chicago, Illinois, October 14 through 17. *Contact the Program Chair for more information about the Annual Meeting:* Richard C. Pugh, (812) 855-4053, School of Education, Indiana University, Bloomington, IN 47405.

The annual dues of $18 (Regular Member) or $10 (Student) include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting.*Address membership correspondence to:* Charles C. Anderson, Jr., (708) 564-4796, MWERA Executive Officer, 1332 Southwind Drive, Northbrook, IL 60062.

MWERA Membership Application

Name (first, mid. initial, last) _____

Mailing address _____

City _____ State _____ Zip _____

Home phone ( ) _____ Office phone ( ) _____

Highest degree _____ Area of specialization _____

Institution/employer _____

MWERA division preferences (Indicate choice):

☐ A. Administration ☐ B. Curriculum Studies ☐ C. Learning and Instruction
☐ D. Measurement & Research Methodology ☐ E. Counseling, Human Dev., & Special Ed.
☐ F. History & Philosophy of Education ☐ G. Social Context of Education & Motivation
☐ H. School & Program Evaluation ☐ I. Professional & Medical Professions
☐ J. Postsecondary Education ☐ K. Teaching & Teacher Education

AERA member? _____

247 BEST COPY AVAILABLE

Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

How can research be made more accessible to teachers?

I think we must first differentiate between research as a verb (i.e., disciplined inquiry) and research as a noun (i.e., facts or principles to be learned and applied). I believe it is only through conceptualizing research as a verb that we can make research more accessible to teachers.

—Lorin Anderson, University of South Carolina

Study groups working independently of administration, but supported by them. *—David Berliner, Arizona State University*

(1) Conduct collaborative research with teachers; (2) Make (research) presentations at meetings attended by teachers and administrators, not just researchers; and (3) Develop more network systems, such as NEA's Mastery in Learning.

—Hilda Borko, University of Colorado

By pursuing questions and research agendas that originate in real persisting problems of practice, and by widening the circle of participation in the process of research to include more and more teachers. *—Christopher Clark, Michigan State University*

Train teachers in doing it themselves—get them to be "teacher researchers" (such as Michigan State University is doing with Debbie Ball). These are the folks who will make other teachers catch the bug.

—Lyn Corno, Teachers College, Columbia University

Primarily through sophisticated training programs; however, they won't work if the school systems do not support the messages contained in the training.

—Edward Deci, University of Rochester

Teachers must be seen as people who can have opportunities in the context of the workplace to formulate and study their own problems. "From big mug to little jug" has been the metaphor used to convey research findings to teachers. Teachers are not little jugs and professors of education are not big mugs. We have as much to learn from teachers as they have to learn from us.

—Elliot Eisner, Stanford University

The demands of teaching are so great that few teachers can afford the luxury of reflection on a regular basis. Extended opportunities for staff development, based on current and relevant research, must be provided on a regular and ongoing basis.

—Thomas Guskey, University of Kentucky

Deliberately supply translation pieces that put the findings in teacher palatable language.

—James Popham, IOX Assessment Associates

(Conduct) research that is relevant and useful to teachers.

—Kevin Ryan, Boston College

We need to meet regularly with teachers and administrators to be responsive to their needs for knowledge and to work with them to solve the problems they identify.

—Jane A. Stallings, Texas A&M University

Involve teachers in studies of their own problems.

—Ralph Tyler, Center for Advanced Study in Behavioral Sciences

Clear, concise, prose. Actionable recommendations.

—Herbert Walberg, University of Illinois-Chicago

They should not just be consumers of research produced by university academicians, but active producers of research.

—Kenneth Zeichner, University of Wisconsin

The University of Akron

William E. Klingele, dean
College of Education
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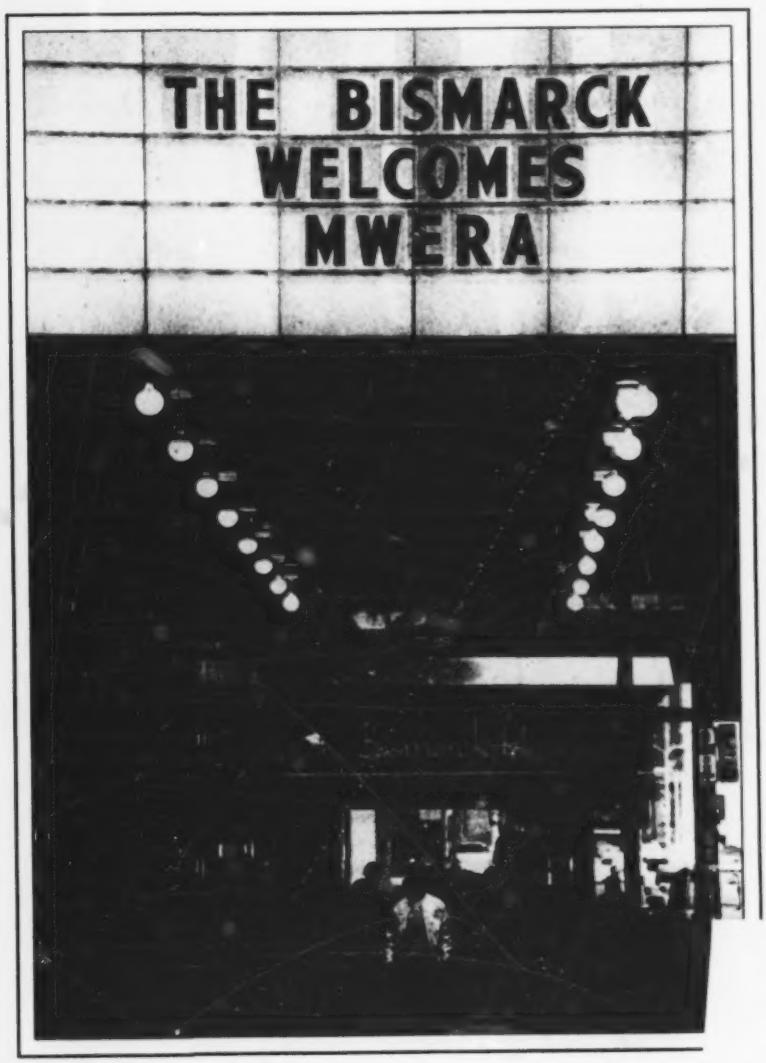

Special Program Issue

October 14–17, 1992

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ON THE COVER

The Bismarck Hotel. In 1894 the first Bismarck Hotel was established in a 40-foot building on Randolph Street in Chicago. Since then it has grown and expanded to provide excellence in accommodations, dining, and entertainment. With 550 rooms and banquet and meeting facilities, the Bismarck offers the Mid-Western Educational Research Association a quality affordable site for its annual meeting.

Information for Contributors to the Mid-Western Educational Researcher

The Mid-Western Educational Researcher accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Gregory J. Marchant
Educational Psychology
Teachers College
Ball State University
Muncie, IN 47306-0595

or

Isadore Newman
Office of Educational Research
College of Education
The University of Akron
Akron, OH 44325-4205

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Program Orientation

Greetings! Welcome to the 1992 MWERA Program. This year's agenda incorporates the new with the old. You'll find many traditional events that make our conference so special, and you'll discover some exciting new offerings too. So mark your calendars to join us October 14–17 at the historic Bismarck Hotel in Chicago. Here is what you have to look forward to this year.

Conference Beginning

Following the preconference training workshops on Wednesday afternoon, the conference begins with an **Invited Presentation** Wednesday evening. **Thomas Good**, University of Missouri–Columbia, will present *Small Group Learning: Problems and Potential* from 7:30–8:30 p.m. This presentation is co-sponsored by the Illinois Association for Educational Research and Evaluation (ARE). A Wine and Cheese Reception for MWERA and ARE members, sponsored by ARE, will be held immediately following the address.

Invited Speakers

In addition to his Wednesday evening address, **Thomas Good** will deliver the traditional Keynote Address on Thursday morning at 9:45 a.m. His topic is *Research on New Directions in Teacher and Student Expectations*.

The President's Address has returned. MWERA President **Barbara Plake**, University of Nebraska, will address conference attendees on Friday morning at 10:00 a.m. Her topic is *Teachers' Assessment Literacy*.

At the Friday luncheon, **Tony Riccio**, Ohio State University, will address us on the topic of *Making the Big Decisions*.

In addition, we are pleased to welcome the following Division-sponsored invited speakers:

Division F: Thursday, 11:00 a.m.–12:20 p.m.
Henry Hixson, Ohio Northern University
History of Development and Financial Support in Higher Education and Future Implications

Division C: Thursday, 1:30–2:50 p.m.
Mary McCaslin, University of Missouri–Columbia
Student Affect: Measurement Problems and Possibilities

Division D: Friday, 4:40–6:00 p.m.
James Stevens, University of Cincinnati
Issues in Multivariate Analysis

Professional Development

The following events are specifically included to facilitate professional growth. Workshops are scheduled for Wednesday from 12:00 noon to 6:30 p.m. On Friday, conference registrants can visit the **Exhibits** in the Lincoln Room from 10:00 a.m. to 4:00 p.m. Exhibitors, more than ever before, will display books and other educational materials and will be present to discuss ideas with MWERAers throughout the day.

Special Activities

We are especially pleased to have offerings for Graduate Students this year. MWERA encourages students to present their research. Incentive awards will be presented to students who author/co-author and present a research paper and attend the General Business Meeting scheduled for Friday, 11:00–11:50 a.m. Additionally, there are two special programs on Saturday especially planned for graduate students. The topic of the first special session, scheduled from 9:00 a.m. to 10:30 a.m., is *Mentoring as a Component of the Professional Development of Graduate Students*. This symposium is presented by faculty from the University of Nebraska–Lincoln. A second session, scheduled from 10:40 a.m. to 12:00 noon, is a workshop on *Obtaining and Surviving the First Faculty Position* organized by **Kim K. Metcalf**, Indiana University.

Social Opportunities

The 1992 program has several social activities planned. A **New Member Welcome** Thursday at 9:00 a.m. has been organized by **Deborah L. Bainer,** Ohio State University-Mansfield. It will be hosted by the Executive Committee. First-time conference attendees will be introduced to the MWERA organization and to the conference proceedings.

Midwest Hospitality greets all conference participants Thursday from 8:30 a.m. to 9:45 a.m. and on Friday and Saturday from 8:00 a.m. to 9:30 a.m. Meet old and new friends alike and enjoy coffee and rolls.

The traditional **Cracker Barrel Social** is on Thursday evening from 6:00 p.m. to 8:00 p.m.

Friday night is the **President's Reception** beginning at 9:00 p.m. in the Regency Suite.

The President's reception will be followed by an early morning roll call for the second annual **Fun Run/Walk/Crawl Along the Lake Shore.** This light exercise route is approximately 2 miles long near the Chicago Yacht Club. President-Elect Kenneth A. Kiewra, University of Nebraska, is again the organizer and exuberant guide for the event.

Chronological Summary of Events

Wednesday, October 14

- 12:00–6:30 p.m.
  Preconference Training Workshops
- 8:00–9:30 p.m.
  Invited Address, Thomas Good
- 9:00–10:00 p.m.
  Wine and Cheese Reception

Thursday, October 15

- 8:30–9:45 a.m.
  Midwest Hospitality
- 9:00–9:45 a.m.
  New Member Welcome
- 9:45–10:45 a.m.
  Keynote Address, Thomas Good
- 11:00 a.m.–12:20 p.m.
  Concurrent Sessions
- 12:30–1:20 p.m.
  Division Meetings
- 1:30–5:50 p.m.
  Concurrent Sessions
- 6:00–8:00 p.m.
  Cracker Barrel Social

Friday, October 16

- 8:00–9:30 a.m.
  Midwest Hospitality
- 8:30–9:50 a.m.
  Concurrent Sessions
- 10:00 a.m.–4:00 p.m.
  Exhibits
- 10:00–10:50 a.m.
  President's Address, Barbara Plake
- 11:00–11:50 a.m.
  General Business Meeting/Graduate Student Awards
- 12:00–1:50 p.m.
  Luncheon: Invited Address, Tony Riccio
- 2:00–6:00 p.m.
  Concurrent Sessions
- 9:00 p.m.–????
  President's Reception

Saturday, October 17

- 7:00 a.m.
  Fun Run/Walk/Crawl Along the Lake Shore
- 8:00–9:30 a.m.
  Midwest Hospitality
- 9:00–12:00 noon
  Concurrent Sessions
- 9:00–10:30 a.m.
  Graduate Students: Symposium on Mentoring
- 10:40–12:00 noon
  Graduate Students: Workshop on First Faculty Job

1992 Program Committee

Many people helped plan the 1992 conference. A special thanks to the following:

Program Chair

Richard C. Pugh, Indiana University

Program Assistant

Kelly A. McDonnell, Indiana University

Division Co-Chairs

A. **William L. Sharp**, Southern Illinois University
Wenifort C. Washington, University of Akron

B. **Sarah E. Peterson**, Northern Illinois University
Rose Mary Scott, University of Wisconsin-Parkside

C. **Gregg Schraw**, University of Nebraska
CarolAnne Kardash, University of Missouri

D. **Ralph O. Mueller**, University of Toledo
Robert S. Barcikowski, Ohio University

E. **Thomas E. Midgette**, University of Arkansas
Darrell A. Luzzo, Johnson County Community College

F. **Fred W. Buddy**, Spelman College
Donald R. Castle, Ashland University

G. **Mary R. Sudzina**, University of Dayton
Joan S. Timm, University of Wisconsin-Oshkosh

H. **Gary Shank**, Northern Illinois University
Daniel Mueller, Indiana University

I. **Gene A. Kramer**, American Dental Association
Chang Y. Miao, American Dental Association

J. **William E. Loadman**, Ohio State University
Kim K. Metcalf, Indiana University

K. **Donald L. Haefele**, Ohio State University
Josue Cruz, Ohio State University

Workshop Coordinators

Stephen Benton, Kansas State University
John J. Kennedy, Ohio State Univesity

Local Coordinators and Exhibits Coordinators

Sharon McNeely, Northeastern Illinois University
Chang Y. Miao, American Dental Association

New Member Welcome Coordinator

Deborah L. Bainer, Ohio State University-Mansfield

Registration Coordinators

Rose McCoy, Indiana University
Roberta VanPelt, Indiana University

Midwest Hospitality Coordinator

Charles Anderson, ETS (Ret.) and MWERA, Executive Officer

Social Coordinator

Adria Karle-Weiss, University of South Florida

Graphic Designer

Rose McCoy, Indiana University

A special thank you to all who reviewed proposals, to Charles Anderson (Executive Officer) and to Executive Committee Members D'Costa, Plake, Kiewra, Price, McNeely, Anderson, Marchant, and Newman.

Association Business

Association Executive Committee

Immediate Past President
Ayres G. D'Costa, Ohio State University

President
Barbara Plake, University of Nebraska

President-Elect
Kenneth A. Kiewra, University of Nebraska

Vice-President
Richard C. Pugh, Indiana University

Secretary
Jay R. Price, University of Wisconsin–Stevens Point

Member-at-Large
Sharon McNeely, Northeastern Illinois University

Executive Officer (ex officio)
Charles Anderson, ETS (Ret.)

Co-editors MID-WESTERN EDUCATIONAL RESEARCHER (ex officio)
Gregory J. Marchant, Ball State University
Isadore Newman, University of Akron

Association Council

Thomas Andre, Iowa State University
Sonya Blixt, Kent State University
Alice J. Corkill, University of Nevada–Las Vegas
Orpha K. Duell, Wichita State University
Mary Ann Flowers, Cleveland State University
E. Jean Harper, Wright State University
Nancy J. Kadunc, Albion College
Gregory J. Marchant, Ball State University
Ralph O. Mueller, University of Toledo
Sarah E. Peterson, Northern Illinois University
John T. Pohlmann, Southern Illinois University
Robert Rosemier, Northern Illinois University
Joan S. Timm, University of Wisconsin-Oshkosh
E. Jane Williams, Columbus Public Schools
Jane Zaharias, Cleveland State University

Election Results

Issue #1: Life Membership dues will be established at ten times the annual, regular membership dues.

Issue #2: MWERA will develop an application to the Internal Revenue Service for status as a charitable organization (501,3c).

New Officers

Vice President: **Thomas Andre,** Iowa State University

Secretary: **Ralph O. Mueller,** University of Toledo

Association Council (1992–94):

Linda Bakken, Wichita State University
Robert S. Barcikowski, Ohio University
Steven Benton, Kansas State University
Paula J. Dupuy, University of Toledo
CarolAnne Kardash, University of Missouri
Thomas Knapp, Ohio State University
Thomas E. Midgette, University of Arkansas
Rose Mary Scott, University of Wisconsin–Parkside

Business Meetings

R.5.1-11 MWERA Division Meetings
Thursday, October 15
12:30–1:20 p.m.

R.8.8 MWERA Association Council and Executive Committee
Thursday, October 15
4:30–5:50 p.m. Maximilian

F.5.1 MWERA General Business Meeting
Friday, October 16
11:00–11:50 a.m., Medill

S.3.7 MWERA 1992 Program Committee and 1993 Program Chair
Saturday, October 17
9:00–10:30 a.m., Lincoln

S.5.1 MWERA Executive Committee
Saturday, October 17
1:00–3:00 p.m., Regency Suite

How to Get to the Conference

When coming into Chicago, attendees have a variety of transportation options. See options below.

O'Hare Airport to the Bismarck Hotel (3 options)

1) Take a CTA train to downtown for about $2.00. Catch the train in the basement of Terminal 3. Take an A or B line. Get off at Lake Transfer. This is in the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block. This is the fastest way during rush hours, and the cheapest.
2) Take the Continental Bus for $12.50 one-way or $22.00 round trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.
3) Take a cab for around $20.00. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7-10 a.m., 3-7 p.m.), the ride could take an hour or more. Tips average fifteen percent.

Midway Airport to the Bismarck Hotel (3 options)

1) Take a CTA bus and train to downtown for about $2.00. Catch the Cicero Bus 54B (headed North) on Cicero Avenue, across from the airport. Ask for a transfer for the train when you board. Get off at 22nd and Cicero. Catch the Douglas-O'Hare line train going East (to the Loop). Get off at the Lake Transfer station. This is the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block.
2) Take a Continental Airport Bus for $9.50 one-way or $16.75 round trip. No reservations are required. See the agent at the booth for tickets.
3) Take a cab for around $18.00. See O'Hare information above regarding time.

Driving But NOT Parking Downtown (3 options)

From the North or West

1) Park near a Metra station and take a Metra Train downtown. From the Metra station you will need to take a cab to the hotel. Depending on where you board the train, your ride can be inexpensive. For details call (312) 836-7000. Be certain to find out about return trips, especially on weekends.
2) Park at O'Hare remote (follow highway signs to O'Hare), take a shuttle into O'Hare and follow any of the O'Hare options. Remote parking is inexpensive.
3) Park at Kiss and Ride at either the Cumberland or the Harlem Avenue exits off of I-94 (the Kennedy). Take the CTA train (See O'Hare option 1). Parking is inexpensive.

From the South or East

1) Park near a Metra Station and take a Metra Train. See 1 above.

Driving And Parking Downtown (4 options)

- Listen to the Radio (670 or 780 am) for traffic reports.
- Remember, rush hours are 7-10 a.m. and 3-7 p.m. in both directions. Travel in the city takes time. There is a lot of construction. Plan at least two hours from the near suburbs to downtown. Plan one-half hour (minimum) in downtown traffic.

1) Coming in on I-94 from the **North**: I-94 junctions with the Kennedy at Irving Park Road. Continue downtown. If traffic is good, it should take 40 minutes from the junction as the Kennedy is under construction. Beyond the Ohio Street exit, get in the righthand lane. Exit at Washington Street going East. At LaSalle, make a left, go one block and make a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15.00 per day) or have the hotel park it. There is NO street parking.
2) Coming in on I-90 from the **Northwest**: Follow I-90 downtown. This becomes the Kennedy. Follow directions of 1 above for exits and parking.
3) Coming in on I-90/I-94 from the **Southeast**: Take the I-90 (Skyway) in. The toll will be about $2.00, but it will save you a lot of time. Get in the Express Lanes to downtown. When you approach the LOOP follow the signs saying I-94, Kennedy and Wisconsin. Exit at Monroe Street and head east. At LaSalle take a left, then a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15.00 per day) or have the hotel park it.
4) Coming in from the **South** or **Southwest**: Take the I-57 in. This junctions with I-94 and I-90. Read 3 above.

If you are arriving some other way, or have any questions, please call Sharon McNeely at (312) 794-2788 before your trip. She will be happy to help.

Conference Registration Information

General Information

1. The Conference sessions begin Wednesday, October 14, 1992 and end Saturday, October 17, 1992. Please make travel arrangements accordingly.

2. Pre-register for the conference using the following registration materials. Be certain to register for the conference, make hotel reservations, and if interested, register for one or two conference training workshops. Workshop descriptions are on pages **10-11**.

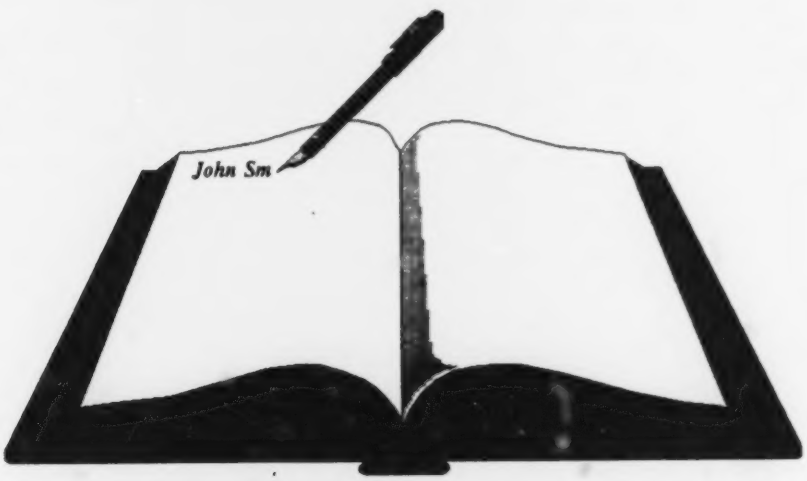
3. All conference participants must be members of MWERA. Please pay 1992 dues if you have not already done so. Now is an excellent time to pay 1993 dues as well. Membership in MWERA includes a subscription to the *Midwestern Educational Researcher*.

4. On-site registration and packet pickup are in the lobby of the Bismarck Hotel at the following times:

Wednesday, October 14, 1992	11:00 a.m. – 4:00 p.m.
Thursday, October 15, 1992	8:00 a.m. – 4:00 p.m.
Friday, October 16, 1992	8:00 a.m. – 4:00 p.m.
Saturday, October 17, 1992	8:00 a.m. – 10:00 a.m.

5. Please bring this program with you to the conference. A replacement copy will cost $3.00.

6. Please share your conference program and registration materials with co-authors, colleagues, and students and invite them to attend.



Mid-Western Educational Research Association
Annual Meeting Registration Form

Please print or type all information
Name _____
Institution _____

Complete Mailing Address _____
_____

Required of New Members Only:
Highest Degree: _____
MWERA Division Preference: _____
(See Page 9)
Major Area of Specialization: _____
Telephone: Office ( ) -
Home ( ) -

Is this your first MWERA conference? yes _____ no _____

ANNUAL MEETING REGISTRATION FEE. Check your membership status below: *Amount*
_____ Graduate Student (pre-registration fee **$30**, on-site **$35**)
_____ Regular Professional (pre-registration fee **$45**, on-site **$55**)
_____ Non-member (pre-registration fee **$50**, on-site **$60**) $ _____

1992 MEMBERSHIP DUES. **$18** Regular Member; **$10** Graduate Students $ _____

1993 MEMBERSHIP DUES. **$18** Regular Member; **$10** Graduate Students $ _____

CONFERENCE WORKSHOP(S). Indicate your choice(s) below:
Wednesday, 12:00 noon, **$15.00** fee
Workshop A _____ or Workshop B _____ $ _____
Wednesday, 3:30 p.m., **$15.00** fee
Workshop C _____ or Workshop D _____ $ _____
Saturday, 10:40 a.m., **$15.00** fee (no cost to graduate students)
Workshop E _____ $ _____

TOTAL AMOUNT DUE: $ _____

Registrants requiring special dietary needs for the Friday Luncheon should describe those needs and enclose with this registration form.

Please make your check payable to:
Mid-Western Educational Research Association (MWERA)
Mail this completed registration form and your check by October 6 to:

Charles Anderson
1332 Southwind Drive
Northbrook, Illinois 60062

Hotel Reservation Form
Mid-Western Educational Research Association Conference
October 14–October 17, 1992
Bismarck Hotel (312) 236-0123
171 West Randolph Street
Chicago, Illinois 60601

Please reserve:
_____ Single Room(s): **$50.00**
_____ Double Room(s) (Double Bed or Twin Beds): **$60.00**
• Date and Time Arriving: _____ (a.m.)(p.m.)
• Date and Time Departing: _____ (a.m.)(p.m.)
Name(s) _____
Affiliation _____
Address _____

This Hotel Reservation must be mailed to the Bismarck Hotel by October 6, 1992

Mid-Western Educational Research Association

Membership Application

1. NAME: (First Name, Last Name)

2. MAILING ADDRESS:

ZIP CODE:

3. HOME PHONE NUMBER:

4. OFFICE PHONE NUMBER:

5. INSTITUTION/EMPLOYER:

6. POSITION: 7. DEGREE:

8. MWERA DIVISIONS OF PRIMARY INTEREST: AERA MEMBER?

9. NEW MEMBERSHIP REQUEST: RENEWAL:

10. Dues for the calendar year (January thru December) are $18.00 (Regular Member), $10.00 (Grad Student) & $180 (Life Membership). Make your check payable to: Mid-Western Educational Research Association (MWERA). Send completed application and check to:

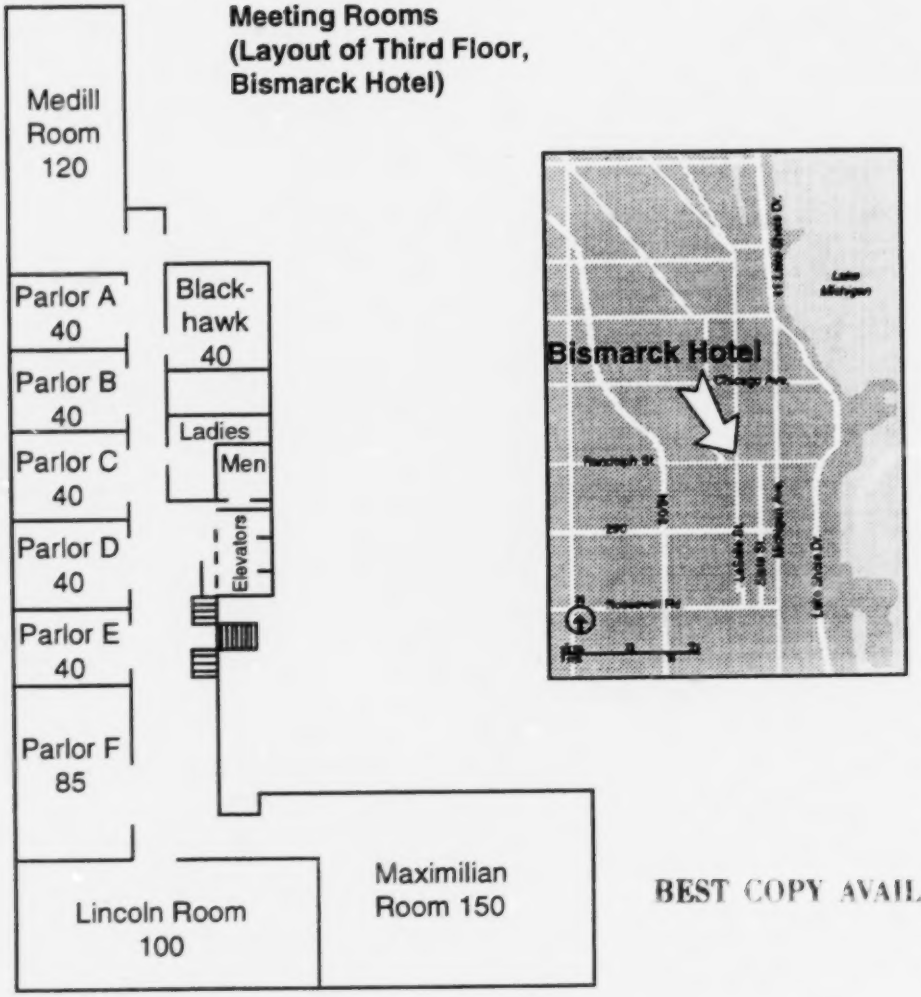
Charles Anderson
MWERA Executive Officer
1332 Southwind Drive
Northbrook, IL 60062

MWERA

MWERA Divisions

A. Administration
B. Curriculum Studies
C. Learning and Instruction
D. Measurement and Research Methodology
E. Counseling, Human Development and Special Education
F. History and Philosophy of Education
G. Social Context of Education and Motivation
H. School and Program Evaluation
I. Professional and Medical Professions
J. Postsecondary Education
K. Teaching and Teacher Education

Meeting Rooms (Layout of Third Floor, Bismarck Hotel)



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MWERA Conference Training Workshops

MWERA is sponsoring five training Workshops in conjunction with the 1992 Annual Meeting. The Workshops have been peer-reviewed and selected to offer a range of topics. Workshops will begin at 12:00 noon and 3:30 p.m. on Wednesday, October 14 and at 10:40 a.m. on Saturday, October 17. A separate registration fee of ***$15.00*** per Workshop will be charged each participant. However, the Workshop scheduled for Saturday, *Obtaining and Surviving the First Faculty Position*, will be free to graduate students. The number of participants permitted in each Workshop is limited; hence, applications will be honored on a "first-come, first-serve" basis. To apply, indicate choice of Workshop(s) on the Conference Registration Form and include the fee in the total amount enclosed. Only applications and fees received by October 6, 1992 can be guaranteed.

W.1.1 Workshop A
12:00–3:20 p.m. — Parlor A
Sample Size Selection Simplified
Program: Computer simulations and free software

Organizer: **Robert S. Barcikowski,** Ohio University

Presenters:
George Johanson, Gordon P. Brooks, Karen Cicmanec, Jody Simmons, Ohio University

The primary objective of this workshop will be to provide attendants with knowledge of how to find sample size for the following statistical analyses: a) survey research, b) regression analyses, c) analysis of variance (univariate and multivariate), and d) repeated measures analyses. A secondary objective will be to inform participants of the software that is available to assist them in finding an appropriate sample size. The presentations will be made at a "user friendly" level, but will be supported by references with more details. Therefore, to follow the lectures, participants should have an elementary background in statistical methods. The workshop will consist of five sections. Each section will contain one example from survey literature research, one example of a grant application, and one or more examples from educational settings. The last thirty minutes will allow for one-on-one questions and for interested participants to try the sample size selection software. All examples, overheads, and references will be available in a notebook provided by Ohio University's School of Applied Behavioral Sciences and Educational Leadership. Free sample size selection software will be made available for participants to copy.

W.1.2 Workshop B
12:00 noon–3:20 p.m. — Parlor C
Soft Modeling: Structural Equation Modeling with Partial Least Squares Estimation
Program: Practical experience in using computer programs

Organizer: **Isadore Newman,** University of Akron

Presenters: **R. Frank Falk, Nancy B. Miller,** University of Akron

Latent variable modeling with partial least squares (LVPLS) or "soft" modeling is a conceptual approach to data analysis. It provides researchers with a useful tool for organizing and analyzing the complex relationships inherent in social science research today. LVPLS, the computer program, is a powerful, yet extremely flexible technique, for path modeling that involves a components' analysis of multiple indicators for theoretical constructs. Because LVPLS does not impose measurement level nor distributional assumptions, it can be used as a general analytic tool when maximum likelihood estimates are not appropriate. Through presentation, discussion, and hands-on experience, workshop participants will be introduced to this new approach to data analysis. Distinctions will be made between the theoretical, practical, and data requirements for "soft" modeling and those of "hard" modeling or structural equation modeling with maximum likelihood estimation. Path diagrams will be used to configure research questions. Following instruction in preparing the data and constructing a LVPLS computer run, participants will gain practical experience in using the computer programs and will be able to give interpretations to the program results. Participants' questions as to how LVPLS can handle their own data analysis problems are welcome.

W.2.1 Workshop C
3:30–6:30 p.m. — Parlor A
Teaching with Cases: Strategies and Applications for Teacher Education
Program: Demonstration and examples; small group simulation and discussion

Presenter: **Mary R. Sudzina,** University of Dayton

This workshop will focus on (l) the rationale for the use of cases in teacher education, (2) research on the outcomes of using case studies, (3) strategies for effectively managing the case study process, and (4) simulation and analysis of a selected case. Applications and implementation will be discussed by content area. Emphasis will be on the active involvement of participants. Each participant will receive an annotated bibliography of selected case study research. Participants will also have the opportunity to preview

several current case study texts that can be applied to teacher education.

W.2.2 Workshop D
3:30–6:30 p.m. — Parlor C
Computer-assisted Data Entry for SPSS and SAS Users: Utilizing Questionnaire Programming Language in Survey Research

Presenters:
Jane Zaharias, Cleveland State University
Carol Ann Stevens, Buffalo State College

The purpose of this workshop will be to demonstrate use of microcomputers in gathering and coding survey data. Questionnaire Programming Language (QPL), a computer-assisted data gathering program, will be featured. QPL allows for the collection of data by direct computer entry, rather than code sheet transfer. Originally designed for conducting structured interviews and telephone surveys, this program can also be used to expedite the coding and computer entry of data resulting from self-report questionnaires. QPL provides for the production of survey instruments; automatic branching; the entry of both string and numeric data; the formatting of data into files that can be read directly by SPSS-X,SPSS-PC, SAS, and SAS-PC; and the automatic generation of SPSS or SAS definition commands, including all required variable and value labels. Direct data entry using QPL will be demonstrated as will the preparation of QPL programs and their conversion to SPSS or SAS files. Working familiarity with microcomputers and word processing programs like WordPerfect is presumed.

*Please note the following workshop is scheduled for **SATURDAY**.*

S.4.4 Workshop E
Saturday 10:40–12:00, Lincoln (Free admission to graduate students)
Obtaining and Surviving the First Faculty Position Program: Graduate students, those interested in job-seeking and hiring processes, and others are encouraged to attend

Organizer: **Kim K. Metcalf,** Indiana University

Presenters: **Kim K. Metcalf,** Indiana University
Martha A. Wilson, Capital University
Andrew T. Lumpe, University of Toledo

Discussant:
Judy L. Genshaft, Dean, College of Education, SUNY Albany

A panel consisting of a current university administrator and three recent graduates who presently occupy faculty positions will briefly overview their experiences in seeking and maintaining their first faculty position. Specifically, each panel member will relate: (a) what the application and interview processes were/are like; (b) suggestions for preparing for and engaging in the job search and interview process; and (c) expectations, difficulties, and suggestions for successfully completing the first year as a university faculty member.

Conference Program

W.3.1 INVITED ADDRESS
Small Group Learning: Problems and Potential

8:00–9:00 P.M — MAXIMILIAN

Presenter: **Thomas Good,** University of Missouri–Columbia

Co-sponsor: Illinois Association for Educational Research and Evaluation (ARE)

W.4.1 WINE and CHEESE RECEPTION for ARE members who attend Dr. Good's address and for all MWERA members

9:00–10:00 P.M. — MAXIMILIAN

Sponsor: Illinois Association for Educational Research and Evaluation (ARE)

Arrangements: **Barbara K. Townsend,** Loyola University Chicago and Executive Director, ARE

Session Overview Schedule for Thursday

	Division										
Time	A	B	C	D	E	F	G	H	I	J	K
8:30-9:45	Midwest Hosptiality										
9:00-9:45	New Member Welcome										
9:45-10:45	Keynote Address - Thomas Good										
11:00-12:20	✓		✓	✓		✓		✓		✓	✓✓✓
12:30-1:20	Division Meetings										
1:30-2:50	✓	✓	✓	✓	✓		✓		✓		✓
3:00-4:20	✓		✓	✓	✓			✓			✓✓✓
4:40-6:00	✓	✓	✓		✓		✓				✓✓
6:00-8:00	Cracker Barrel Social										

R.1.1 Midwest Hospitality Coffee and Friends

8:30–9:45 — MAXIMILIAN

Organizer: **Charles Anderson,** ETS (Ret.) and MWERA, Executive Officer

R.2.1 New Member Welcome

9:00-9:45 — LINCOLN

Host: **Executive Committee**

Organizer: **Deborah L. Bainer,** Ohio State University–Mansfield

First-time conference attendees are invited to sip a cup of coffee while being introduced to the organization, the officers, and the conference. Special Badges will identify new members and first-time attendees.

R.3.1 KEYNOTE ADDRESS Research on New Directions in Teacher and Student Expectations

9:45–10:45 — MAXIMILIAN

Welcome: **Barbara Plake**
President, MWERA
University of Nebraska

Introduction: **Richard C. Pugh**
Program Chair, MWERA
Indiana University

Keynote: **Thomas Good**
University of Missouri–Columbia

Suggestions To Presenters

To make conference sessions as helpful and enjoyable as possible, the Executive Committee asks presenters to please follow these guidelines.

1. Send a completed copy of your paper to the Session Discussant so that it is received no later than September 30, 1992. Discussants are not obligated to discuss papers received after this date.
2. Bring at least 40 copies of your paper to the conference. People interested in your paper should receive a copy at the conference.
3. Make overheads and handouts that are attractive and readable.
4. Plan to present, rather than read, your paper in the time allotted.
5. Because of purchase costs, storage space, and maintenance issues, equipment other than overheads will not be provided.

R.4.1 Individual Differences in Learning, Cognition, and Belief Systems

11:00–12:20 — MEDILL

Division C Paper Session

Chair: **Gregg Schraw,** University of Nebraska

Predictors of Epistemological Beliefs: Comparing Adults With Only a Secondary Education to Adults With Post-Secondary Education
Marlene Schommer, Wichita State University

Individual Differences in Verbal and Non-Verbal Thinking Habits of Grade 6 Students
Jacqueline A. Specht, University of Western Ontario
Jack Martin, Simon Fraser University

Impact of Level of Metacognitive Awareness on Calibration of Performance
Alice J. Corkill, University of Nevada–Las Vegas
Dale T. Koshida, University of Toronto

Self-Efficacy Beliefs and Writing Performance: The Effect of a Writing Intensive Class
Julie L. Remington, Karen D. Multon, University of Missouri–Columbia

Discussant: **Gregg Schraw,** University of Nebraska

R.4.2 Leadership and Style

11:00–12:20 — PARLOR A

Division A Paper Session

Chair: **Pearlmarie W. Goddard,** University of Akron

Administrative Role and Functions of Intellectual Style
Rich Hofmann, Miami University
Lon Stettler, Hamilton City Schools
G. Ronald Bickert, Belpre City Schools

Effect of Administrative Leadership Style and Personality on Leader and Staff Work Satisfaction
Scherie E. Lampe, Patricia E. Robertson, Patricia J. Koll, David M. Hegedus, University of Wisconsin–Oshkosh

School Spending: Can Administrators Defend Spending for Achievement?
William L. Sharp, Southern Illinois University–Carbondale

Discussant: **A. William Place,** Ball State University

R.4.3 Investigations of College Student Behavior

11:00–12:20 — PARLOR B

Division J Paper Session

Chair: **Kim K. Metcalf,** Indiana University

Academically Able University Students' Responses to Attractions and Deterrents to a Career in Teaching
Sonja J. Smith, Mount Vernon Nazarene College

MINORITY ACHIEVERS PROGRAM: An investigative study of the achievement and persistence of academically able minority students in a predominantly white university
HingKwan Luk, Lucy C. Jacobs, Indiana University

Effects of Traditional and Content Area Reading Courses at the College Freshman Level on Reading Achievement
Kathleen Gianaris, Harper Community College
Marvin Willerman, Northeastern Illinois University

Discussant: **Kim K. Metcalf,** Indiana University

R.4.4 Division F Invited Speaker

11:00–12:20 — PARLOR C

Chair: **Donald R. Castle,** Ashland University

History of Development and Financial Support in Higher Education and Future Implications

Henry Hixson, Vice President for Development, Ohio Northern University

R.4.5 Statistical Distributions: Some Problems

11:00–12:20 — PARLOR D

Division D Paper Session

Chair: **E. Jane Williams,** Columbus Public Schools (Ohio)

The Rise and Fall and Rise of Multiple Regression
Tianqi Han, Dennis W. Leitner, Southern Illinois University–Carbondale

A Distribution-Free Maximum Test of Location
R. Clifford Blair, University of South Florida
Shlomo S. Sawilowsky, Wayne State University

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A Monte Carlo Evaluation of Two Test Statistics For the Test of a Single Population Proportion
Timothy H. Husband, Ralph O. Mueller, University of Toledo

Discussant: **Isadore Newman,** University of Akron

R.4.6 Topics in Educational Evaluation
11:00–12:20 — PARLOR E
Division H Paper Session

Chair: **Daniel Mueller,** Indiana University

Survey: Computer Use in Kansas Elementary Schools
Billy C. Yates, Emporia State University

Report of a Pilot Project for Rural-Gifted Adolescents
Albert M. Bugaj, University of Wisconsin-Marinette
Sandy Walejko, Iowa-Grant School District (Wisconsin)

Art Student Evaluation: Perils and Pitfalls
John W. Zimmer, Adeline Wong, University of Toledo
David Guip, Toledo Museum of Art
Dennis Hocevar, University of Southern California
Gwendolyn Boylan, Jo Ann Jennings, Defiance Schools, Ohio

An Approach to Analyzing Afrocentric Instruction
Jeannie L. Hudson, Mankato State University

R.4.7 Teacher Traits and Characteristics
11:00–12:20 — PARLOR F
Division K Paper Session

Chair: **Carmen R. Giebelhaus,** Ohio State University

A Study of Teacher Empathy By Two Teacher Groups: Vocational and Academic
Lewis P. Burrell, Debra L. Derbyshire, Kent State University

FOCUS: An Explanation of the Human Behavioral System
Gary F. Russell, Janet Severino, Ashland University

The Reflective Expert Paradox
Gregory J. Marchant, Ball State University

Differences in Attitudes and Intentions to Use Computers in a Group of Pre-Service Teachers
Kris L. Bosworth, Santiago Cueto, Indiana University

R.4.8 Preservice Education
11:00–12:20 — LINCOLN
Division K Paper Session

Chair: **Ronald N. Marso,** Bowling Green State University

What Do We Expect in 1992 from Elementary Student Teachers? A National Analysis of Rating Forms
Frederick C. Isele, Indiana State University

Preparing Teachers for Their Multiple Roles in a New Educational System
In-Sook Lee, Indiana University

The Personality Profiles of Prospective Educators Who Have Chosen to Complete and Have Chosen Not to Complete Their Preparation to Become Teachers
Susan Sears, John J. Kennedy, Ohio State University
Gail L. Kaye, Ross Laboratories (Ohio)

The Effect of Instruction Delivery Systems on Preservice Teacher Content Knowledge and Learner Attitudes Toward Computer-Based Instruction
Beth A. Wiegmann, Thomas E. Thompson, Northern Illinois University

Discussant: **Fred L. Pigge,** Bowling Green State University

R.4.9 Multicultural–A
11:00–12:20 — MAXIMILIAN
Division K Paper Session

Chair: **Betsy Feldkamp,** Ohio State University

The Pedagogy of Enrichment: Successful Lessons of Exemplary Urban Teachers
Susan M. Brookhart, Timothy G. Rusnak, Duquesne University

You're Not in Kansas Anymore Toto: Comparing Preservice Teachers' Perceptions of Lower Income Minority Students in an Urban Setting with Middle and Upper Middle Income Students in a Suburban Setting
Rosemary F. Schiavi, University of Evansville

An Examination of Attitudes and Perceptions of Primary Students Towards Children From Different Racial and Socio-Economic Backgrounds: A Collaborative Research Project
Jeffrey S. Winter, National-Louis University
Daniel Ryan, Hubbard Woods School

Intervention Strategies in Multicultural Education: A Comparison of Pre-Service Models
William G. Sparks III, M. Elizabeth Verner, Illinois State University

Gender Equity in the Teaching Force
Susan M. Tracz, Nancy G. Lee, Barbara Burch, Robert Monke, California State University-Fresno

DIVISION MEETINGS

R.5.1 Division A (Administration)
12:30–1:20 — PARLOR A
Co-Chairs:
William L. Sharp, Southern Illinois University
Wenifort C. Washington, University of Akron

R.5.2 Division B (Curriculum Studies)
12:30–1:20 — PARLOR B
Co-Chairs:
Sarah E. Peterson, Northern Illinois University
Rose Mary Scott, University of Wisconsin-Parkside

R.5.3 Division C (Learning and Instruction)
12:30–1:20 — PARLOR C
Co-Chairs:
Gregg Schraw, University of Nebraska
CarolAnne M. Kardash, University of Missouri

R.5.4 Division D (Measurement and Research Methodology)
12:30–1:20 — PARLOR D
Co-Chairs:
Ralph O. Mueller, University of Toledo
Robert S. Barcikowski, Ohio University

R.5.5 Division E (Counseling, Human Dev. & Special Educ.)
12:30–1:20 — PARLOR E
Co-Chairs:
Thomas E. Midgette, University of Arkansas
Darrell A. Luzzo, Johnson County Community College

R.5.6 Division F (History and Philosophy of Education)
12:30–1:20 — PARLOR F
Co-Chairs:
Fred W. Buddy, Spelman College
Donald R. Castle, Ashland University

R.5.7 Division G (Social Context of Educ. & Motivation)
12:30–1:20 — MAXIMILIAN
Co-Chairs:
Mary R. Sudzina, University of Dayton
Joan S. Timm, University of Wisconsin-Oshkosh

R.5.8 Division H (School and Program Evaluation)
12:30–1:20 — BLACKHAWK
Co-Chairs:
Gary Shank, Northern Illinois University
Daniel Mueller, Indiana University

R.5.9 Division I (Professional and Medical Professions)
12:30–1:20 — MAXIMILIAN
Co-Chairs:
Gene A. Kramer, American Dental Association
Chang Y. Miao, American Dental Association

R.5.10 Division J (Postsecondary Education)
12:30–1:20 — LINCOLN
Co-Chairs:
William E. Loadman, Ohio State University
Kim K. Metcalf, Indiana University

R.5.11 Division K (Teaching and Teacher Education)
12:30–1:20 — MEDILL
Co-Chairs:
Donald L. Haefele, Ohio State University
Josue Cruz, Ohio State University

R.6.1 Division C Invited Speaker
1:30–2:50 — MEDILL

Chair: **CarolAnne M. Kardash,** University of Missouri-Columbia

Student Affect: Measurement Problems and Possibilities
Mary McCaslin, University of Missouri-Columbia

R.6.2 Leadership for Today's Schools
1:30–2:50 — PARLOR A
Division A Paper Session

Chair: **Reene A. Alley,** University of Akron

Leadership in the 1990's—Probing the Fifth Dimension
David S. Hurst, Wichita State University

The Effects of Applicant Age and Academic Achievement in Screening Decisions for the Employment of Secondary Teachers
A. William Place, Theodore J. Kowalski, Ball State University
I. Philip Young, Ohio State University

Humor in Leadership: State of the Art
Gordon P. Brooks, Ohio University

Discussant: **Charles E. Kline,** Purdue University

R.6.3 Viewing Curriculum from Multiple Perspectives
1:30–2:50 — PARLOR B
Division B Paper Session

Chair: **Donald Reyes,** Northern Illinois University

Operationalizing the Curriculum: Teachers' Perceptions of Which Learning Tasks Are Most Important for Students' Academic Success
Sheryl W. Piercy, Illinois State University
Joan Feld McGuire, LaSalle School District

Domains in Curriculum: An Empirical Knowledge Base
Linda S. Behar, Loyola University

Novice Teachers' Curricular Conceptions and Processes
Eva Weisz, DePauw University

Discussant: **Donald Reyes,** Northern Illinois University

R.6.4 Contemporary Research Topics in Counseling and Development
1:30–2:50 — PARLOR C
Division E Paper Session

Chair: **Nudie E. Williams,** University of Arkansas

A Study of the Preparation of Vocational Teachers for Teaching Mainstreamed At-Risk Special Needs Students
Lewis P. Burrell, Kent State University

Educational Planning and Academic Achievement of Eighth Grade Students: A Racial/Ethnic Comparison
Wei-Cheng Mau, Dianne M. Held, Wichita State University

Current Developments Related To Measuring Forgiveness
Michael J. Subkoviak, Robert D. Enright, Ching-Ru Wu, University of Wisconsin-Madison

Dialogic Approaches to Ethnographic Data Collection, Analysis and Reporting Formats
Cindy Snyder, Indiana University
Frank Snyder, Midwest Action Methods Training Center (Indiana)

Discussant: **Darrell A. Luzzo,** Johnson County Community College (Kansas)

R.6.5 Interpreting Statistical Models
1:30–2:50 — PARLOR D
Division D Paper Session

Chair: **Elizabeth Randolph,** Ohio University

Building and Interpreting Causal Models
Ralph O. Mueller, Paula J. Dupuy, University of Toledo

Feathering: An Iterative Procedure for Modifying Hypothesized Factor Structures
Rich Hofmann, Miami University

Some Nonstandard Applications of the Analysis of Covariance Model
John T. Pohlmann, Southern Illinois University-Carbondale

Discussant: **Thomas Knapp,** Ohio State University

R.6.6 Gender and Cultural Issues

1:30–2:50 — PARLOR E
Division G Paper Session

Chair: **Joan S. Timm,** University of Wisconsin-Oshkosh

The relationship between achievement goal orientation, gender and beliefs about sport: A developmental perspective
Darren C. Treasure, Glyn C. Roberts, University of Illinois at Urbana-Champaign

Differential Effects of Culture and Sex on Anxiety
Naim C. Gupta, Betty E. Gridley, Ball State University

Differential Effects of Culture and Sex on Self-Concept
Naim C. Gupta, Betty E. Gridley, Ball State University

R.6.7 Learning and Training in the Professions

1:30–2:50 — PARLOR F
Division I Paper Session

Chair: **Chang Y. Miao,** American Dental Association

The Effect of Fatigue on Resident and Medical Student Learning
Timothy J. Van Susteren, Deborah E. Simpson, Robert E. Condon, Basil C. Salaymeh, Barry B. Browne, Medical College of Wisconsin

Back to Basics: A Description of a Research Program for Enhancing Learning in Training and Human Resource Development
Ronald R. Morgan, Edward E. Gordon, Loyola University of Chicago
Judith A. Ponticell, University of Illinois at Chicago

The Personality and Motivation of the Combined Degree Student: What Do Written Measures Tell Us?
James M. Schuerger, Cleveland State University
Bonnie J. Jones, Northeastern Ohio Universities College of Medicine
Isadore Newman, University of Akron
Robert E. Seeman, Northeastern Ohio Universities College of Medicine

Discussant: **Mary E. Lunz,** American Society of Clinical Pathologists

R.6.8 Preparation and Education of Teachers

1:30–2:50 — MAXIMILIAN
Division K Paper Session

Chair: **Carmen R. Giebelhaus,** Ohio State University

The Effect of Teacher Preparation Programs on Student Views of Learning
Linda H. Chiang, Anderson University
Larry W. Henriksen, Ball State University

Critical Components of On-Campus Clinical Laboratory Experiences: Preservice Teachers' Perceptions
Kim K. Metcalf, Indiana University

Novice Teachers' Ratings of Job Entry Expectations Prior to and Following Teaching: Evidence of Idealistic Expectations and Transition Shock
Ronald N. Marso, Fred L. Pigge, Bowling Green State University

Some Predictors of Pre-Service Elementary Teachers' Grade Level Preferences: Fear and Loathing in Teacher Education
Karl A. Matz, Mankato State University

R.7.1 Text Processing Strategies and Textual Manipulations: Differences Between Good and Poor Readers

3:00–4:20 — MEDILL
Division C Paper Session

Chair: **Marlene Schommer,** Wichita State University

Differences in the Everyday Reading Practices of Gifted and Non-Gifted Adolescents: Report from a Pilot Study
M. Cecil Smith, Northern Illinois University

The Upstream Role of Phonological Information: Differences between Good and Poor Readers
Daniel H. Robinson, University of Nebraska

The Effects of Headings, Structural Importance, and Ability on Reading Patterns and Test Performance
John R. Surber, University of Wisconsin-Milwaukee

The Generation of Inferences from Different Verbal Representations
Richard K. Staley, Nelson F. Du Bois, SUNY Oneonta

Discussant: **Marlene Schommer,** Wichita State University

R.7.2 Special Education and Mentorship

3:00–4:20 — PARLOR A
Division A Paper Session

Chair: **Sally Childs,** Akron Public Schools

Perception of Presence of Mentor(s) in Masters, Doctoral Degree, and/or Certification Endeavor As Well As Current Professional Assignment
Hazel H. Loucks, Hazel B. Andros, Hongru Yun, Southern Illinois University-Carbondale

Planning and Managing in Special Education Cooperatives
Linda G. DuncanMalone, Ball State University
William D. McInerney, Purdue University

Effects of Therapist Structure and Patient Expectations on Perceptions of Therapist Effectiveness
Moshe Torem, Akron General Medical Center
Isadore Newman, Patricia Pallota, University of Akron
Dawn D. Lord, Supervising Psychologist, Akron

Discussant: **Patricia O'Connell,** Illinois State University

R.7.3 Human Development and Parenting Research

3:00–4:20 — PARLOR C
Division E Paper Session

Chair: **Darrell A. Luzzo,** Johnson Community College (Kansas)

The Interactive Effects of Affection and Control on Punishment: Parents' Responses
Elmer A. Lemke, Andrea L. Selvaggio, James J. Johnson, Illinois State University

Education of the Homeless Children in South Africa
Zodwa M. Dlamini, University of Iowa

Perceived Actions of Parents and Attitudes of Youth
Thomas S. Parish, Kansas State University
James R. Necessary, Ball State University

Is There a Parenting Style for Single Parents Who Want Their Children to Attend College?
James J. Johnson, Elmer A. Lemke, Illinois State University

Discussant: **Isaiah Sessoms,** Clarion University of PA

R.7.4 Measurement: Construct Validity

3:00–4:20 — PARLOR D
Division D Paper Session

Chair: **Donald L. Haefele,** Ohio State University

Can the KDI Test Be Used to Identify Children Who Will Qualify for a Reading Intervention Program?
John W. Fraas, Ashland University
Cynthia Frick, Richland County (Ohio) Office of Education

An Examination of the Construct Validity of the Hutchins Behavioral Inventory
Debra Buchman, Ralph O. Mueller, University of Toledo

Construct Validity of the DCAT
Ritu K. Khanna, Janet K. Sheehan, John T. Mouw, Southern Illinois University-Carbondale

An Assessment of GPA Prediction: DCAT as a Possible Solution
Ritu K. Khanna, Dennis W. Leitner, Southern Illinois University-Carbondale

Discussant: **George Johanson,** Ohio University

R.7.5 Survivors of Social Oppression Speak Out!

3:00–4:20 — PARLOR E
Division H Symposium

Co-Chairs: **Carolyn Bohlen, Jacqueline Rickman,** Northern Illinois University

Topic: *Survivors of social oppression speak out!: Ethnographic interviews with African Americans and persons with disabilities give directives to educational restructure*

Participants:
Carolyn Bohlen, Northern Illinois University
Jacqueline Rickman, Northern Illinois University
Pamela Barnett, Northern Illinois University
Shirley Carter, Northern Illinois University
Leon Liddell, Northern Illinois University
Sandee Stroncak, Northern Illinois University

R.7.6 Academic and Demographic Profiles of Teacher Educators

3:00–4:20 — PARLOR F
Division K Paper Session

Chair: **Josue Cruz,** Ohio State University

Demographic and Biographic Characteristics of Prospective Teacher Educators
Joy D. McCullough, Trinity Western University

Academic Indicators of the Research Productivity of Prospective Teacher Educators
Joy D. McCullough, Trinity Western University
John J. Kennedy, Hak Ping Tam, Ohio State University

The Professional Activities of Teacher Educators in Liberal Arts Institutions
Linda E. Morrow, Muskingum College

Similes for Teaching and Classroom Teaching Orientations
Gregory J. Marchant, Thomas S. Schroeder, Ball State University

R.7.7 Reading and Research

3:00–4:20 — LINCOLN
Divison K Paper Session

Chair: **Susan R. Cramer,** University of Wisconsin

The Importance of Reading, Writing and Talking in Learning to Teach: How Experience Influences Conceptual Change for Pre-Service Teachers
Nancy J. Fellows, Northeastern Illinois University

Exploring Emergent Writing in Kindergarten: A Study in Six Classrooms
Lois Zamzow, Winneconne Elementary School, Oshkosh
Judy C. Lambert, University of Wisconsin-Oshkosh

Reading Tutors' Comments About Students' Responses to Instruction
Susan M. Tancock, Ball State University

The Relationship Between Undergraduate Training and Beliefs About Reading Instruction: A Follow-Up Study After the First Year of Teaching
Mary Ann Wham, Northern Illinois University

R.7.8 Collaboration

3:00–4:20 — MAXIMILIAN
Division K Paper Session

Chair: **Sue Sears,** Ohio State University

Induction Programs as Staff Development for Novice and Mentor Teachers
Eva Weisz, DePauw University

The Center for Collaborative Research: Looking at the First Year
Ruth Ravid, Marianne Handler, National-Louis University

School/University Collaboration for the Induction of Beginning Teachers
Ruth A. Koskela, Patricia J. Koll, University of Wisconsin-Oshkosh

The Satellite Program: A Collaboration for Clinical Experiences in Teacher Education
Linda F. Tusin, Elmhurst College

R.8.1 Elaboration and Problem-Solving Strategies: Different Research Approaches

4:30–5:50 — PARLOR F
Division C Symposium

Chair: **Beverly Dretzke,** University of Wisconsin–Eau Claire

Spontaneous Analogical Transfer: A Problem-Oriented Approach
Douglas R. Needham, Wilfrid Laurier University

Evaluating the Impact of Elaboration Strategies Between Above-Average and Average Learners
Eileen Wood, Wilfrid Laurier University
Jodi Mason, University of Waterloo

The Effectiveness of Elaboration Strategies for Low Achieving Grade Five Students
Teena Willoughby, Anne Bolger, University of Waterloo

Social Interaction Strategies in an Activity Environment
Lilly E. Both, Wilfrid Laurier University

Discussant: **Beverly Dretzke,** University of Wisconsin–Eau Claire

R.8.2 Exploring Transformational Leadership and the Open Systems Model as Curricular Threads in Doctoral Administrative Programs

4:30–5:50 — PARLOR A
Division A Symposium

Organizer: **Martin H. Jason,** Roosevelt University

Chair: **Charles D. Almo,** Roosevelt University

Rationale for Including Tranformational Leadership and the Open Systems Model as Curricular Threads in Doctoral Administrative Programs
Charles D. Almo, Roosevelt University

Theoretical Perspectives of Transformational Leadership and the Open Systems Model and Research Implications on Doctoral Dissertations
Martin H. Jason, Roosevelt University

Application of Transformational Leadership and the Open Systems Model to the Doctoral Internship in Educational Administration
Tom Van Dam, Roosevelt University

Application of Transformational Leadership and the Open Systems Model to Doctoral Courses in Educational Administration
Yiping Wan, Roosevelt University

Discussant: **Richard Smith,** Martin Luther King High School

R.8.3 Current Issues in Science and Mathematics Education

4:30–5:50 — PARLOR B
Division B Paper Session

Chair: **M. Cecil Smith,** Northern Illinois University

Evaluating a Geology Curriculum for Non-Majors
William J. Boone, Indiana University

The Nature of Nature: Ideas of Nature in Curriculum for Environmental Studies
Henry St. Maurice, University of Wisconsin–Stevens Point

Assessment in Elementary Science (K-8): A Curriculum Model for Training Teachers
Cory Cummings, Belinda Wholeben, Northern Illinois University

Van Hiele Levels and Logo Based Instruction
Mian M. Yusuf, University of Wisconsin–Parkside

Teaching Minuends 0-9; Is the Concrete Through Abstract Teaching Sequence Necessary?
Karen Sealander, Northern Illinois University

Discussant: **Rene T. Stofflett,** Northern Illinois University

R.8.4 Multicultural Counseling Research

4:30–5:50 — PARLOR C
Division E Paper Session

Chair: **Robbie Steward,** Michigan State University

Effects of Training Counselors in Gay, Lesbian, and Bisexual Issues
Susan B. Young, Lorraine J. Guth, Indiana University

Examination of An Ethno-Cultural Sensitive Approach in Counseling African-American Students
Carolyn M. Dejoie, University of Wisconsin-Madison

A Comparative Examination of Ethnic Background and Its Differential Impact Upon a Subjects' Responses to Projective Tests
Doris N. Cooper, Ronald R. Morgan, Loyola University of Chicago

Sex Role Identity and Work Salience of Males and Females in Banking
Diane Kjos, Governors State University
Beney McCue, First of America Bank-Kankakee

Discussant: **Paula J. Dupuy,** University of Toledo

R.8.5 Self-Concept

4:30–5:50 — PARLOR D
Division G Paper Session

Chair: **Jupian J. Leung,** University of Wisconsin-Oshkosh

Measuring Self-Concept Development in Preschool Children
Barbara J. Leys, Ruth Ravid, National-Louis University

Content Specificity as it Relates to Academic Self Concept and Academic Achievement: A Cross Cultural Comparison
Victoria Manion, Indiana University

An Attempt to Enhance Children's Self-Concepts: A Follow-Up Report
Thomas S. Parish, Kansas State University
James R. Necessary, Ball State University

Factors Which Significantly Affect the Self Esteem of Suburban Elementary Students
Georgia J. Kosmoski, Matteson Elementary School District
Dennis R. Pollack, Pollack and Associates Clinical Psychologists

R.8.6 Teacher Behavior and Characteristics

4:30–5:50 — PARLOR E
Division K Paper Session

Chair: **Jeff Peck,** Ohio State University

A Comparison of Interactions Between Degreed and Non-degreed Early Childhood Teachers and Their Four-Year-Old Children
Kimberly A. White, Ball State University

Selected Elements of Effective Teaching: Testing Their Practical Value with Ohio's Principals
Judith M. Hudgins, Kent State University

Selected Elements of Effective Teaching: Testing Their Practicality as Differentially Perceived by Ohio's Elementary Teachers
Cynthia J. McMillin-Temesi, Santa Clara University

Selected Elements of Effective Teaching: Testing Their Practical Value with Teachers in a Large Urban School District
Carol L. Baird, Youngstown City Schools

R.8.7 Biography and Potpourri

4:30–5:50 — LINCOLN
Division K Paper Session

Chair: **Peter Rillero,** Ohio State University

Components of Job Satisfaction and Dissatisfaction Among School Psychologists
Alex Thomas, Miami University

Talking with Masterful Teachers
Rozanne Sparks, Richard P. Lipka, Pittsburg State University

Five Instructors—A Study of Instructional Preference of Preservice Teachers
Charles E. Skipper, Miami University

Dimensions of Literacy Learning
Lucy Ann Dahlberg, Nancy Seifert-Kessell, Cleveland State University

R.8.8 Association Council Meeting

4:30–5:50 — MEDILL

All current and elected association council members and officers

R.9.1 Cracker Barrel Social

6:00-8:00 — MAXIMILIAN

Arrangements: **Adria Karle-Weiss**, University of South Florida

Session Overview for Friday

Time	Division											
	A	B	C	D	E	F	G	H	I	J	K	Inter-Division
8:00-9:30	Midwest Hospitality											
8:30-9:50	✓	✓	✓		✓		✓		✓	✓		
10:00-4:00	Exhibits											
10:00-10:50	President's Address - Barbara Plake											
11:00-11:50	General Business Meeting/Graduate Student Awards											
12:00-1:50	Luncheon - Tony Riccio, Invited Speaker											
2:00-3:00						✓	✓	✓			✓✓✓	✓
3:10-4:30	✓			✓	✓	✓	✓	✓		✓		✓
4:40-6:00			✓	✓	✓	✓	✓				✓✓	
9:00-????	President's Reception											

F.1.1 Midwest Hospitality Coffee and Friends

8:00–9:30 — LINCOLN

Organizer: **Charles Anderson,** ETS (Ret.) and MWERA, Executive Officer

F.2.1 How Abstract Representations Facilitate a Variety of Learning Outcomes

8:30–9:50 — MEDILL

Division C Symposium

Organizer: **Kenneth A. Kiewra,** University of Nebraska

Chair: **Judith G. Lambiotte,** Texas Christian University

Participants:

Joel R. Levin, University of Wisconsin
Nelson F. Du Bois, SUNY Oneonta
Kenneth A. Kiewra, University of Nebraska
Daniel H. Robinson, University of Nebraska

Discussant: **Judith G. Lambiotte,** Texas Christian University

F.2.2 Reform and Restructuring Schools

8:30–9:50 — PARLOR A

Division A Paper Session

Chair: **Linda Hayes,** University of Akron

The Reform Movement: A Fifty-State Summary of State Actions for Personnel Evaluation
Carol B. Furtwengler, Wichita State University

The Impact of an Educational Accountability Mechanism on an Ohio School District's Policy and Practices: A Case Study
Reene A. Alley, University of Akron

A Conceptual Model for Systemic School Restructuring: Intersection of Systemic, Historical, and Futurological Perspectives
In-Sook Lee, Indiana University

Discussant: **Robert Estabrook,** Indiana State University

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F.2.3 Multicultural and Global Perspectives of Curricular Issues

8:30–9:50 — PARLOR B

Division B Paper Session

Chair: **Rose Mary Scott,** University Wisconsin–Parkside

Multicultural Education K-12: District Level Initiatives Linking School and Community
Gloria T. Alter, Northern Illinois University
Jack Barshinger, DeKalb Public Schools

The Effect of Socioeconomic Levels and Similar Instruction on Scholastic Aptitude Test Scores of Asian, Black, Hispanic, and White Students
Rex W. Bolinger, Ball State University

Global Perspectives: Identifying Existing Attitudes as a Prerequisite to Curriculum Development
Barbara G. Ludwig, Ohio State University

Discussant: **Rose Mary Scott,** University of Wisconsin–Parkside

F.2.4 African American Male Academies: Definitive Questions and Answers

8:30–9:50 — PARLOR C

Division E Invited Symposium

Chair & Organizer: **Thomas E. Midgette,** University of Arkansas

Presenters:
Nudie E. Williams, University of Arkansas
Mary Ann Flowers, Cleveland State University
Robbie Steward, Michigan State University
Isaiah Sessoms, Clarion University of PA
Lloyd Leake, Gonzaga University

F.2.5 Parental Involvement and Environmental Issues

8:30–9:50 — PARLOR E

Division G Paper Session

Chair: **Charles C. Wilson,** University of Wisconsin–Oshkosh

Low Level Electromagnetic Fields: A Possible Vexation for Effective Learning
Roger N. Carlsen, Cheryl L. Bogen, University of Dayton

'Honey, go get your computer for these people.': A qualitative study of low income families with good readers
Carolyn F. Chryst, Nolan J. Weil, David F. Lancy, University of Toledo

Causes Underlying Minimal Parent Involvement in the Education of their Children
David J. Dwyer, Jeffrey B. Hecht, Illinois State University

Teaching AIDS Prevention Through Classroom Instrument Development and Research
Bobbie M. Anthony, Chicago State University

F.2.6 Research in the Professions: Scope and Content

8:30–9:50 — PARLOR F

Division I Paper Session

Chair: **Ayres G. D'Costa,** Ohio State University

Attitudes of Medical Practitioners Toward Peer Review
Bruce G. Rogers, P. J. Porter, Gerald Bisbey, University of Northern Iowa

Personality and Success Among Stockbrokers
Jaime M. Dodd, Karen D. Multon, University of Missouri–Columbia

Interjudge Reliability and/or Decision Reproducibility
Mary E. Lunz, John Stahl, American Society of Clinical Pathologists

Validity of the Restructured Part II National Board Dental Examination
Gene A. Kramer, David R. DeMarais, American Dental Association

Discussant: **Bonnie J. Jones,** Northeastern Ohio Universities College of Medicine

F.2.7 Influences, Traits, and Politics in Higher Education

8:30–9:50 — PARLOR D

Division J Paper Session

Chair: **Sonja J. Smith,** Mount Vernon Nazarene College

Charismatic Traits of Future Educational Leaders
Ana Gil-Serafin, Western Michigan University

Disciplinary Influences on Faculty Perceptions of the Chair's Role in Facilitating Tenure
Fran Daly, Loyola University of Chicago

Discussant: **Sonja J. Smith,** Mount Vernon Nazarene College

F.3.1 EXHIBITS

10:00-4:00 — LINCOLN

The MWERA exhibits are unlike other convention exhibits. This is a chance to meet area publishers and their editors personally. Not only can you find out what is currently published, but talk about your publication plans, and resources you need. Previous exhibitors have thanked us for the opportunity to talk with our members and get valuable ideas. Exhibits only run for one day, so plan your day to give yourself time to see the books and materials, and meet the publishers.

F.4.1 PRESIDENT'S ADDRESS Teachers' Assessment Literacy

10:00–10:50 — MAXIMILIAN

Introduction: **Richard C. Pugh**
Indiana University

Address: **Barbara Plake**
University of Nebraska

F.5.1 General Business Meeting—All MWERA Members

11:00–11:50 — MAXIMILIAN

Graduate Student Awards. Any graduate student registered for the conference as a graduate student, and presenting at the conference, will be eligible for an award. The awards will be drawn at the Business Meeting through a random process and the student must be present to win. The award will provide MWERA membership for the following year, a fee waiver for the next conference, and a certificate of recognition. No more than three awards will be drawn. This is a Graduate Student Research Incentive Program supported jointly by MWERA and the Wisconsin Education Research Association. The awards will be presented by **Ayres G. D'Costa,** Immediate Past President MWERA.

F.6.1 Luncheon

12:00–1:50 — WALNUT ROOM

Introduction: **John J. Kennedy,**
Ohio State University

Speaker: **Tony Riccio,** Ohio State University

Title: *Making the Big Decisions*

All registrants are invited to attend.
Badge controls admission. Arrange for pickup through pre-registration. Badges also prepared on site at the meeting

F.7.1 Supervision

2:00–3:00 — MEDILL

Division K Paper Session

Chair: **John Laut,** Ohio State University

Supervision of the Early Field Experiences of Preservice Teachers—Exploring Alternative Models
Frank Kline, Dennis E. Potthoff, Wichita State University

The Clinical Supervision Cycle: A Component of Staff Development Programs
Susan R. Cramer, Ruth A. Koskela, University of Wisconsin-Oshkosh

The Third Ear Mechanical Device: A Pilot Study
Carmen R. Giebelhaus, Josue Cruz, Ohio State University

F.7.2 Assessment

2:00–3:00 — PARLOR A

Division K Paper Session

Chair: **Dan Keller,** Ohio State University

An Evaluation of Elementary Inservice Training for Holistic Assessment
Deborah L. Bainer, Frances D. Porter, Ohio State University–Mansfield

Teacher Concerns with the Implementation of Holistic Scoring
Frances D. Porter, Deborah L. Bainer, Ohio State University–Mansfield

Three Factors Affecting Students' Disruptive Behavior in a Middle School Classroom
Jeanne M. Brown, Claudia M. Keller, Sylvia A. Legg, Christine R. Lentz, Linda Bakken, Wichita State University

F.7.3 What is the Value of Vignettes and Cases in Professional Educator Preparation Programs?

2:00-3:00 — PARLOR B

Inter-Division Symposium

Organizer and Chair: **Dennis C. Zuelke,** Jacksonville State University

Presenters:
Dennis C. Zuelke, Jacksonville State University
William Taglia, Chicago Public Schools

Discussant: **Marvin Willerman,** Northeastern Illinois University

F.7.4 Classroom Strategies

2:00–3:00 — PARLOR D

Division H Paper Session

Chair: **Albert M. Bugaj,** University of Wisconsin Center–Marinette County

The Effect of Time in Integrated Learning Systems (ILS) as a Ratio Scale of Measurement on Algebra Achievement
Robert West, Dearborn Public Schools, Michigan
Donald Marcotte, Wayne State University

Student Outcomes Under Incentive Pay Plans: Teacher Perceptions
Nancy DeFrates-Densch, Cory Cummings, Thomas O. Schrader, Northern Illinois University

Applying Qualitative Methods to Multicultural Education: An Example
Carolyn Bohlen, Leon Liddell, Northern Illinois University

F.7.5 Substance Abuse

2:00–3:00 — PARLOR E

Division G Paper Session

Chair: **Roger N. Carlsen,** University of Dayton

A Two Year Study of Substance Use Among Secondary Students: Analysis of Employment As a Variable
Jay C. Thompson, Jr., C. Van Nelson, Ball State University
Van E. Cooley, Westfield Washington Schools

A profile of students engaged in substance abuse
C. Van Nelson, Jay C. Thompson, Jr., Ball State University
Van E. Cooley, Westfield Washington Schools

A Study to Determine the Effect of Extracurricular Participation on Student Alcohol and Drug Use in Secondary Schools
Van E. Cooley, Westfield Washington Schools
C. Van Nelson, Jay C. Thompson, Jr., Ball State University

F.7.6 American Schools and the Educational Community

2:00–3:00 — PARLOR F

Division F Paper Session

Chair: **Nelson Strobert,** Gettysburg Lutheran Seminary

The Advancement of Museums into the Educational Community: A Historical Perspective
Betsy Feldkamp, Ohio State University

Science in American School Readers of the Nineteenth Century
Peter Rillero, Ohio State University

Discussant: **Fred W. Buddy,** Spelman College

F.7.7 Post-Secondary Instructional Strategies

2:00–3:00 — MAXIMILIAN
Division K Paper Session

Chair: **Kim K. Metcalf,** Indiana University

Does Extending Wait-Time Increase Learning by College Students
Orpha K. Duell, Wichita State University

The Effects of Changing the Criteria for STAD Team Awards at Midterm: Two Parallel Experiments
William J. Gnagey, Kimberly Ostrowski, Illinois State University

A Construct Validation of the Motivated Strategies for Learning Questionnaire (MSLQ)
Ronald C. McClendon, Isadore Newman, University of Akron

F.8.1 Issues in Professional Development and Restructuring

3:10–4:30 — MEDILL
Division H Paper Session

Chair: **Gary Shank,** Northern Illinois University

A Study of the Perceptions of Collaborative Partners in a Professional Development School Project
Janice L. Hall, Indiana State University

Evaluation of a State Educational Reform Summer School Program
Theresa Strand, Educational Testing Service

Performance-Based-Pay: What Do Teachers and Administrators Think?
Thomas O. Schrader, Cory Cummings, Nancy DeFrates-Densch, Northern Illinois University

University-School Collaboration for Formative Evaluation of a Restructuring Process: What Does This Mean for All of Us?
In-Sook Lee, Indiana University

F.8.2 Students in Our Schools

3:10–4:30 — PARLOR A
Division A Paper Session

Chair: **Hazel H. Loucks,** Southern Illinois University–Carbondale

A Clinical Observation Instrument for Cooperative Learning Classrooms
Carol B. Furtwengler, Wichita State University

High School Students Who Lead: Congressional Futures Forum
Pearlmarie W. Goddard, University of Akron

Administering a Parent Involvement Program: Effect Upon Fourth Grade Student Achievement
Charles E. Kline, Purdue University
Albert L. Long, Western Boone County Community School Cooperation

Discussant: **Jane W. Andringa,** Governor's State University

F.8.3 Methods of Inquiry in Higher Education

3:10–4:30 — PARLOR B
Division J Paper Session

Chair: **Craig Deville,** Ohio State University

A Multimethod Approach to Student Feedback of Instruction
Neil E. Prokosch, National-Louis University

The Factor Structure of the Rosenberg Self-Esteem Scale and the Mooney Problem Checklist
Peggy Woodard, David E. Suddick, Governors State University
Anthony White, Georgia State University

Perry's Scheme of Intellectual and Ethical Development: Its Implications and Correlates in a Vocationally Undecided Population
Hedy J. Jones, Isadore Newman, John R. Cochran, William E. Nemec, University of Akron

Discussant: **Craig Deville,** Ohio State University

F.8.4 AIDS Prevention for Women: An Overview of the Preliminary Results from an NIMH Research Project with Emphasis on Multicultural and Social Influences

3:10–4:30 — PARLOR C
Division E Symposium

Organizer: **Paula J. Britton,** Kent State University

Chair: **Anita P. Jackson,** Kent State University

Presentation of Preliminary Statistical Findings
Paula J. Britton, Kent State University

Strategies for Empowering Women in the Prevention of HIV/AIDS
Anita P. Jackson, Kent State University

African-American Women and AIDS
Tammy James, Kent State University

Hispanos Y AIDS
Evelyn Orozco, Kent State University

Women in Various Roles and AIDS
Colleen D. Character-Gibbons, Kent State University

F.8.5 Measurement: Predicted Validity

3:10–4:30 — PARLOR D
Division D Paper Session

Chair: **Ayres G. D'Costa,** Ohio State University

Age and Gender as Factors Influencing Student Perceptions of Instructor Effectiveness
Elizabeth L. Harris, Stephanie L. Brand, Elmer A. Lemke, Illinois State University

Psychometric Adaptations of Cognitive Tests: Applications to Assessment of Dementia
Evelyn Z. Becker, Ayres G. D'Costa, Ohio State University

The Predictive Validity of Paper-folding Spatial-ability Items
Gene A. Kramer, Chang Y. Miao, American Dental Association

Discussant: **Patricia Elmore,** Southern Illinois State University

F.8.6 Contextual and Educational Issues: Cooperative Learning, Grading, and Cases

3:10–4:30 — PARLOR E
Division G Paper Session

Chair: **Barbara J. Leys,** National-Louis University

Illuminating Educational Contexts: Preservice Preferences for Visual Case Studies
Mary R. Sudzina, University of Dayton

Guidelines for Determining Language Arts Grades for Students with Learning Disabilities
Linda M. Lakin, Roger N. Carlsen, University of Dayton

Cooperative Learning and Preservice Education
Christine L. Channer-Dugan, Utica College of Syracuse University

Cooperation Learning: We Need to Model the Model in Preservice Teacher Education
M. Jean Bouas, Northwest Missouri State University

F.8.7 Historical Influences and the Normal School

3:10–4:30 —PARLOR F
Division F Paper Session

Chair: **Donald R. Castle,** Ashland University

The Cleveland Normal School, 1874-1936
Melinda Kline, Brunswick City School District, Ohio
Charles M. Dye, University of Akron

Rockefeller and General Education Board Influences on Vocationalism in Education, 1880-1925
Louise E. Fleming, Ashland University
Rita S. Saslaw, University of Akron

Discussant: **Fred W. Buddy,** Spelman College

F.8.8 Research Studies: Topical Potpourri

3:10-4:30 — MAXIMILIAN
Inter-Division Paper Session

Chair & Discussant: **William J. Boone,** Indiana University

Social Justice and the Valued Concepts of Right and Wrong in Strong Social Groups
Eddie Frecker, Unaffiliated
Presenting for the Author: **Lynne M. Hudson,** University of Toledo

Educational Administrators' and Teachers' Knowledge of Assessment Practices
James C. Impara, Barbara Plake, Jennifer J. Fager, University of Nebraska

Protecting Children at Play: A Study of Alarmed Toys
William E. Loadman, Micheline B. Chalhoub, Ohio State University

F.9.1 Multicultural–B
4:40–6:00 — MEDILL
Division K Paper Session

Chair: **Linda Morrow,** Ohio State University

A Multicultural Undergraduate Teacher Preparation Experience
Kathleen Maury, Mankota State University
Rose Mary Scott, University of Wisconsin–Parkside

Preservice Teachers' Perceptions and Sensitivities to Multicultural Classroom Concerns: A Self-Inventory
Mary Ann Flowers, Cleveland State University

Preservice Education's Need for and Developmental Approach to a Multicultural Educational Perspective for Today's Pluralistic Society
Marsha M. Hutchins, Ohio State University

A Descriptive Study of Successful African American Students Who Persisted to Graduation in a Teacher Education Program
Carol P. Felder, Joyce E. Killian, Southern Illinois University–Carbondale

F.9.2 Science
4:40–6:00 — PARLOR A
Division K Paper Session

Chair: **Dan Keller,** Ohio State University

An Abstract Content Analysis of Journals for Science Teachers
Peter Rillero, Kim Roempler, Ohio State University

A Review of the Literature of College Level Science Courses for Preservice Teachers
Betsy Feldkamp, Ohio State University

Knowledge of Elementary Science Pedagogy at the Preservice Level
Beth A. Wiegmann, Rene T. Stofflett, Northern Illinois University

Evaluating and Improving a Science Methods Course for Elementary Teachers in Training
William J. Boone, Indiana University

F.9.3 Cultural and Moral Attitudes and Education
4:40–6:00 — PARLOR B
Division G Paper Session

Chair: **Ruth Ravid,** National-Louis University

A Descriptive Study of Community-Based Programs of Values Education Emerging from State-Sponsored Guidelines
Santiago Cueto, Daniel Mueller, Indiana University

The Hmong and American Education: Promise and Problems
Joan S. Timm, University of Wisconsin–Oshkosh

Caucasian-American and Chinese-American Children's Attitudes Toward Schoolwork and Learning
Jupian J. Leung, Daniel O. Lynch, J. Gordon Nelson, University of Wisconsin–Oshkosh

F.9.4 Learning and Cognition
4:40–6:00 — PARLOR C
Division C Paper Session

Chair: **John R. Surber,** University of Wisconsin–Milwaukee

Do Students Who Prefer To Learn Alone Achieve Better Than Students Who Prefer To Learn With Peers?
James Wallace, Manhattan College

Schematic Influences on the Comprehension of AIDS Education Materials
Kathryn J. Quick, Thomas Andre, Iowa State University

Assessing Understanding in School-aged Children
Lori C. McKinney, Buford E. Wilson, Governors State University

Logo Meta-analytic Review of Elementary Level Effect Size Research
Dwight A. Morrison, Duluth Public Schools & University of Minnesota-Duluth

Discussant: **John R. Surber,** University of Wisconsin-Milwaukee

F.9.5 Innovative Approaches in Counseling Practice and Assessment

4:40-6:00 — PARLOR E
Division E Paper Session

Chair: **Paula J. Dupuy,** University of Toledo

Personality Characteristics of Practitioner versus Scientist-Practitioner Oriented Psychology Graduate Students
Karen D. Multon, Christine Pupo, University of Missouri-Columbia

Research Study on Perspectives of Pennsylvania First Year University ACT 101 Students and their High School Teachers
Isaiah Sessoms, Charles Dukes, Clarion University of PA

Using Student Self-Assessment in an Interdisciplinary Training Program
Judith M. Hudgins, Kent State University

Assessing the Impact of an Academic Counselor Training Program: The Development of Faculty One Step Beyond the Role of Advisor
Edward D. Kapraun, University of Arkansas
Doris W. Coldren, Pennsylvania State University-Fayette Campus

Discussant: **E. Jean Harper,** Dayton Public Schools

F.9.6 The Corporate Model and Education in America

4:40-6:00 — PARLOR F
Division F Session

Chair: **Nelson Strobert,** Gettysburg Lutheran Seminary

The Influence of the Corporate Model on American Education During the Twentieth Century
Donald R. Castle, Ashland University

An Historical Overview
Charles M. Dye, The University of Akron

Discussant: **Nelson Strobert,** Gettysburg Lutheran Seminary

F.9.7 Division D Invited Speaker

4:40-6:00 — MAXIMILIAN

Chair: **Robert S. Barcikowski,** Ohio University

Issues in Multivariate Analysis
James Stevens, University of Cincinnati

F.10.1 President's Reception: Wine and Cheese

9:00-???? — REGENCY SUITE

Hosted by: **Barbara Plake**
President MWERA
University of Nebraska

Arrangements: **Adria Karle-Weiss,** University of South Florida

All registrants are invited to attend
Please, no smoking

Session Overview for Saturday

Time	Division											
	A	B	C	D	E	F	G	H	I	J	K	Special Graudate Student Sessions
7:00-8:00	Fun Run/Walk/Crawl											
8:00-9:30	Midwest Hospitality											
9:00-10:30			✓	✓	✓			✓		✓		✓
10:40-12:00			✓					✓			✓	✓
1:00-3:00	Executive Committee Meeting											

S.1.1 FUN RUN—2 Miles

7:00 A.M. — CHICAGO YACHT CLUB, MONROE STREET AND LAKE SHORE DRIVE

Run Director: **Kenneth A. Kiewra**, University of Nebraska

S.2.1 Midwest Hospitality Coffee and Friends

8:00–9:30 — MAXIMILIAN

Organizer: **Charles Anderson**, ETS (Ret.) and MWERA, Executive Officer

S.3.1 Politics in Higher Education: A Cross-Issue Analysis

9:00–10:30 — PARLOR A

Division J Paper Session

Chair: **Edward R. Hines**, Illinois State University

Political Maneuvering of a Board of Trustees
Patricia Kay Adkins, Moraine Valley Community College

The Governance of Adult Education
Philip Bobich, Moraine Valley Community College

The Third Airport and Higher Education
Charles I. Jenrich, Prairie State College

To Join or Not To Join: Beecher's Political Dilemma
Joan M. Simon, Prairie State College

Discussant: **Edward R. Hines**, Illinois State University

S.3.2 An Evaluation of the Perceived Effectiveness of Local School Councils

9:00–10:30 — PARLOR B

Division H Symposium

Chair: **Crystal Hawkins**, Northern Illinois University

Participants:
Crystal Hawkins, Northern Illinois University
Karen D. Barbee-Dixon, Northern Illinois University
Jocelyn Nichols, Northern Illinois University
Christopher Shaw, Northern Illinois University

S.3.3 Effects of Text Organization and Representation on Learning and Recall

9:00–10:30 — PARLOR C

Division C Paper Session

Chair: **Alice J. Corkill**, University of Nevada-Las Vegas

How Prose Goes: Varying the Topical and Structural Organization of Prose
Daniel H. Robinson, Kenneth A. Kiewra, University of Nebraska

Application and Transfer of a Mnemonic Strategy
Beverly Dretzke, University of Wisconsin-Eau Claire
Joel R. Levin, University of Wisconsin-Madison

Using Supplemental Representations to Learn Operant Concepts
Jeffrey L. Bayer, Kenneth A. Kiewra, *University of Nebraska*

Effects of Whole Versus Stacked Maps as Study Aids
Judith G. Lambiotte, Texas Christian University

Discussant: **Alice J. Corkill,** University of Nevada-Las Vegas

S.3.4 Monte Carlo Methods in Educational Statistics and Measurement

9:00–10:30 — PARLOR D
Division D Symposium

Chair: **Elizabeth Randolph,** Ohio University

Presenters:
Elizabeth Randolph, Ohio University
George Johanson, Ohio University
Shu-Yuan Chang, Ohio State University
Ronald Elliott, Ohio University-Chillicothe

S.3.5 Topics in Special Education

9:00–10:30 — PARLOR E
Division E Paper Session

Chair: **Mary Ann Flowers,** Cleveland State University

A Comparative Investigation of the Differential Effects of American Sign Language and Total Communication on Story Comprehension and Memory in Deaf Children
James Altenbach, Ronald R. Morgan, Loyola University of Chicago

Paraprofessionals in Special Education: Trends and Issues
David E. Suddick, Jane W. Andringa, Governors State University
Anthony J. White, Georgia State University

Sequence of Rendering Assistance to Three Groupings of Students Identified as Eligible for Special Education and Parental Satisfaction with Services Rendered
Jane W. Andringa, David E. Suddick, Governors State University

Discussant: **Carolyn M. Dejoie,** University of Wisconsin-Madison

S.3.6 Mentoring as a Component of the Professional Development of Graduate Students

9:00-10:30 — PARLOR F
Inter-Division Symposium

Organizer and Chair:
Lori J. Nebelsick-Gullett, University of Nebraska

Faculty Perceptions of the Mentoring Process
Rayne Sperling Dennison, University of Nebraska

Mentoring in Graduate Education in Psychology
Mark Lukin, University of Missouri-Columbia

Finding the Balance in Mentoring: A Student's Perspective
Wendy Naumann-Sandoval, University of Nebraska

The Mentoring Relationship in Academia: What It is and Who It Benefits
Tracy Thorndike-Christ, University of Nebraska

Discussants:
Leslie Eastman Lukin, University of Missouri-Columbia
Dennis W. Leitner, Southern Illinois University-Carbondale

S.3.7 1992 Program Committee and 1993 Program Chair

9:00–10:30 — LINCOLN

Organizer: **Richard C. Pugh,** Indiana University

S.4.1 Conceptual Change, Problem Solving, and Expertise

10:40–12:00 — MEDILL

Division C Paper Session

Chair: **CarolAnne M. Kardash,** University of Missouri–Columbia

Transforming Knowledge: Six Case Studies of Conceptual Change in a Sixth Grade Matter and Molecules Unit
Nancy J. Fellows, Northeastern Illinois University

Learning from Scientific Text: Conceptual Change vs. Didactic Approaches
Sharon K. Chambers, Thomas Andre, Iowa State University

The Development of Probabilistic Reasoning in Children
Janet K. Sheehan, John T. Mouw, Southern Illinois University–Carbondale

An Examination of Expertise in Teaching: A Definition of Expertise and the Comparison of Differences in Solving Classroom Management Problems
Jennifer J. Fager, Gregg Schraw, University of Nebraska
Alice J. Corkill, University of Nevada–Las Vegas

Discussant: **CarolAnne M. Kardash,** University of Missouri–Columbia

S.4.2 Evaluation of the Drug Free Schools and Communities Act: School and Community Perspectives—Summary

10:40–12:00 — PARLOR A

Division H Symposium

Organizer: **Cecelia A. McFadden,** University of Chicago

Chair: **Geraldine L. Oberman,** Chicago Public Schools

Presenters:
Cecelia A. McFadden, University of Chicago
Rosanne A. Paschal, Northern Illinois University
John W. Payton, University of Chicago
Patricia Zaror-Feller, Chicago Public Schools

Discussants:
Bernadette Strykowski, University of Illinois at Chicago
Lawrence Whitman, Midwest Center for Drug-Free Schools & Communities

S.4.3 Teaching and School Effects

10:40–12:00 — PARLOR F

Division K Paper Session

Chair: **Deborah L. Bainer,** Ohio State University–Mansfield

Teacher Motivation and Work Performance
Donald L. Haefele, Craig A. Mertler, Ohio State University

The Practitioner's View of Goodlad's Postulates
David E. Suddick, Leon J. Zalewski, Governors State University

Critical Abilities of Teaching Within the Preservice Teacher Curriculum - What Do We Know and What Should We Know to Enhance Classroom Teaching?
Dan Keller, John Laut, Ohio State University

S.4.4 SPECIAL WORKSHOP Obtaining and Surviving the First Faculty Position (No cost for graduate students)

10:40-12:00 noon — Lincoln

Workshop E

Presenters:
Kim K. Metcalf, Indiana University
Martha A. Wilson, Capital University
Andrew T. Lumpe, University of Toledo

Discussant: **Judy L. Genshaft,** Dean, College of Education, SUNY Albany

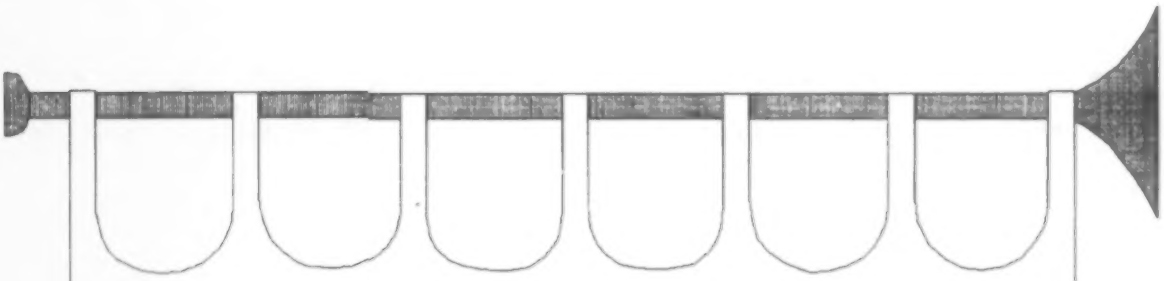
S.5.1 Executive Committee Meeting

1:00–3:00 — REGENCY SUITE

Abstracts and Papers

Abstracts of papers presented at the 1992 Annual Meeting are published separately and will be available to all Conference Participants (at no cost) at the Registration Desk at the Bismarck Hotel Lobby during Registration hours. Additional copies may be ordered from the Executive Officer, Charles Anderson, at a cost of $3.00 to cover prepaid postage and handling.

Papers presented at the 1992 Annual Meeting are eligible for inclusion in the ERIC System. A form with instructions is available at the Registration Desk. Participants are encouraged to use this opportunity to achieve greater exposure for their research.



1993 Annual Meeting

Next year's Annual Meeting will be held at the Bismarck Hotel in Chicago from Wednesday, October 13 through Saturday, October 16.

Program chairs are needed as are volunteers to help with other aspects of conference planning. Interested individuals are encouraged to contact the 1993 program chair.

Thomas Andre
Department of Psychology
W112 Lagomarcino
Iowa State University
Ames, IA 50011

Suggestions, ideas and comments related to the 1993 program are also welcome.

Plan now to attend!

Participant Index

Adkins, Patricia Kay S.3.1
Alley, Reene A. R.6.2, F.2.2
Almo, Charles D. R.8.2
Altenbach, James S.3.5
Alter, Gloria T. F.2.3
Anderson, Charles R.1.1, R.2.1, R.8.8, F.1.1, F.5.1, S.2.1, S.3.7, S.5.1
Andre, Thomas R.8.8, F.9.4, S.3.7, S.4.1
Andringa, Jane W. F.8.2, S.3.5
Andros, Hazel B. R.7.2
Anthony, Bobbie M. F.2.5
Bainer, Deborah L. R.2.1, F.7.2, S.3.7, S.4.3
Baird, Carol L. R.8.6
Bakken, Linda F.7.2
Barbee-Dixon, Karen D. S.3.2
Barcikowski, Robert S. W.1.1, R.5.4, F.9.7, S.3.7
Barnett, Pamela R.7.5
Barshinger, Jack F.2.3
Bayer, Jeffrey L. S.3.3
Becker, Evelyn Z. F.8.5
Behar, Linda S. R.6.3
Benton, Steven S.3.7
Bickert, G. Ronald R.4.2
Bisbey, Gerald F.2.6
Blair, R. Clifford R.4.5
Blixt, Sonya R.8.8
Bobich, Philip S.3.1
Bogen, Cheryl L. F.2.5
Bohlen, Carolyn R.7.5, F.7.4
Bolger, Anne R.8.1
Bolinger, Rex W. F.2.3
Boone, William J. R.8.3, F.8.8, F.9.2
Bosworth, Kris L. R.4.7
Both, Lilly E. R.8.1
Bouas, M. Jean F.8.6
Boylan, Gwendolyn R.4.6
Brand, Stephanie L. F.8.5
Britton, Paula J. F.8.4
Brookhart, Susan M. R.4.9
Brooks, Gordon P. W.1.1, R.6.2
Brown, Jeanne M. F.7.2
Browne, Barry B. R.6.7
Buchman, Debra R.7.4
Buddy, Fred W. R.5.6, F.7.6, F.8.7, F.9.6, S.3.7
Bugaj, Albert M. R.4.6, F.7.4
Burch, Barbara R.4.9
Burrell, Lewis P. R.4.7, R.6.4
Carlsen, Roger N. F.2.5, F.7.5, F.8.6
Carter, Shirley R.7.5
Castle, Donald R. R.4.4, R.5.6, F.8.7, F.9.6, S.3.7
Chalhoub, Micheline B. F.8.8
Chambers, Sharon K. S.4.1
Chang, Shu-Yuan S.3.4
Channer-Dugan, Christine L. F.8.6
Character-Gibbons, Colleen D. F.8.4
Chiang, Linda H. R.6.8
Childs, Sally R.7.2
Chryst, Carolyn F. F.2.5
Cicmanic, Karen W.1.1
Cochran, John R. F.8.3
Coldren, Doris W. F.9.5
Condon, Robert E. R.6.7
Cooley, Van E. F.7.5
Cooper, Doris N. R.8.4
Corkill, Alice J. R.4.1, R.8.8, S.3.3, S.4.1
Cramer, Susan R. R.7.7, F.7.1
Cruz, Josue R.5.11, R.7.6, F.7.1, S.3.7
Cueto, Santiago R.4.7, F.9.3
Cummings, Cory R.8.3, F.7.4, F.8.1
D'Costa, Ayres G. R.2.1, R.8.8, F.2.6, F.5.1, F.8.5, S.5.1
Dahlberg, Lucy Ann R.8.7
Daly, Fran F.2.7
DeFrates-Densch, Nancy F.7.4, F.8.1
Dejoie, Carolyn M. R.8.4, S.3.5
DeMarais, David R. F.2.6
Dennison, Rayne Sperling S.3.6
Derbyshire, Debra L. R.4.7
Deville, Craig F.8.3
Dlamini, Zodwa M. R.7.3
Dodd, Jaime M. F.2.6
Dretzke, Beverly R.8.1, S.3.3
Du Bois, Nelson F. R.7.1, F.2.1
Duell, Orpha K. R.8.8, F.7.7
Dukes, Charles F.9.5
DuncanMalone, Linda G. R.7.2
Dupuy, Paula J. R.6.5, R.8.4, F.9.5
Dwyer, David J. F.2.5
Dye, Charles M. F.8.7, F.9.6
Elliott, Ronald S.3.4
Elmore, Patricia F.8.5
Enright, Robert D. R.6.4
Estabrook, Robert F.2.2
Fager, Jennifer J. F.8.8, S.4.1
Falk, R. Frank W.1.2
Felder, Carol P. F.9.1
Feldkamp, Betsy R.4.9, F.7.6, F.9.2
Fellows, Nancy J. R.7.7, S.4.1
Fleming, Louise E. F.8.7
Flowers, Mary Ann R.8.8, F.2.4, F.9.1, S.3.5
Fraas, John W. R.7.4
Frick, Cynthia R.7.4
Furtwengler, Carol B. F.2.2, F.8.2
Genshaft, Judy L. S.4.4
Gianaris, Kathleen R.4.3
Giebelhaus, Carmen R. R.4.7, R.6.8, F.7.1
Gil-Serafin, Ana F.2.7
Gnagey, William J. F.7.7
Goddard, Pearlmarie W. R.4.2, F.8.2
Good, Thomas W.3.1, R.3.1

Gordon, Edward E. R.6.7
Gridley, Betty E. R.6.6
Guip, David R.4.6
Gupta, Naim C. R.6.6
Guth, Lorraine J. R.8.4
Haefele, Donald L. R.5.11, R.7.4, S.3.7, S.4.3
Hall, Janice L. F.8.1
Han, Tianqi R.4.5
Handler, Marianne R.7.8
Harper, E. Jean R.8.8, F.9.5
Harris, Elizabeth L. F.8.5
Hawkins, Crystal S.3.2
Hayes, Linda F.2.2
Hecht, Jeffrey B. F.2.5
Hegedus, David M. R.4.2
Held, Dianne M. R.6.4
Henriksen, Larry W. R.6.8
Hines, Edward R. S.3.1
Hixson, Henry R.4.4
Hocevar, Dennis R.4.6
Hofmann, Rich R.4.2, R.6.5
Hudgins, Judith M. R.8.6, F.9.5
Hudson, Jeannie L. R.4.6
Hudson, Lynne M. F.8.8
Hurst, David S. R.6.2
Husband, Timothy H. R.4.5
Hutchins, Marsha M. F.9.1
Impara, James C. F.8.8
Isele, Frederick C. R.4.8
Jackson, Anita P. F.8.4
Jacobs, Lucy C. R.4.3
James, Tammy F.8.4
Jason, Martin H. R.8.2
Jennings, Jo Ann R.4.6
Jenrich, Charles I. S.3.1
Johanson, George W.1.1, R.7.4, S.3.4
Johnson, James J. R.7.3
Jones, Bonnie J. R.6.7, F.2.6
Jones, Hedy J. F.8.3
Kadunc, Nancy J. R.8.8
Kapraun, Edward D. F.9.5
Kardash, CarolAnne M. R.5.3, R.6.1, S.3.7, S.4.1
Karle-Weiss, Adria R.9.1, F.10.1, S.3.7
Kaye, Gail L. R.4.8
Keller, Claudia M. F.7.2
Keller, Dan F.7.2, F.9.2, S.4.3
Kennedy, John J. R.4.8, R.7.6, F.6.1, S.3.7
Khanna, Ritu K. R.7.4
Kiewra, Kenneth A. R.2.1, R.8.8, F.2.1, F.5.1, S.1.1, S.3.3, S.5.1
Killian, Joyce E. F.9.1
Kjos, Diane R.8.4
Kline, Charles E. R.6.2, F.8.2
Kline, Frank F.7.1
Kline, Melinda F.8.7
Knapp, Thomas R.6.5
Koll, Patricia J. R.4.2, F.7.8
Koshida, Dale T. R.4.1
Koskela, Ruth A. R.7.8, F.7.1
Kosmoski, Georgia J. R.8.5
Kowalski, Theodore J. R.6.2
Kramer, Gene A. R.5.9, F.2.6, F.8.5, S.3.7
Lakin, Linda M. F.8.6
Lambert, Judy C. R.7.7
Lambiotte, Judith G. F.2.1, S.3.3
Lampe, Scherie E. R.4.2
Lancy, David F. F.2.5
Laut, John F.7.1, S.4.3
Leake, Lloyd F.2.4
Lee, In-Sook R.4.8, F.2.2, F.8.1
Lee, Nancy R.4.9
Legg, Sylvia A. F.7.2
Leitner, Dennis W. R.4.5, F.7.4, S.3.6
Lemke, Elmer A. R.7.3, F.8.5
Lentz, Christine R. F.7.2
Leung, Jupian J. R.8.5, F.9.3
Levin, Joel R. F.2.1, S.3.3
Leys, Barbara J. R.8.5, F.8.6
Liddell, Leon R.7.5, F.7.4
Lipka, Richard P. R.8.7
Loadman, William E. R.5.10, F.8.8, S.3.7
Long, Albert L. F.8.2
Lord, Dawn D. R.7.2
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Sawilowsky, Shlomo S.	R.4.5
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Schommer, Marlene	R.4.1, R.7.1
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Schuerger, James M.	R.6.7
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Sears, Susan	R.4.8, R.7.8
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MID-WESTERN EDUCATIONAL RESEARCHER

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As we begin our final year as editors, we encourage the continued involvement by the membership in "your" journal. We have seen an increase in the quantity and quality of manuscripts submitted and hope that this trend will continue. This issue includes some letters to the editors as well as a review of the Spring 1992 special multicultural education issue of the *Mid-Western Educational Researcher*. Both were unsolicited, but welcomed. Please continue to communicate your ideas and concerns to us.

We encourage the reproduction of articles in the *Mid-Western Educational Researcher* for instructional use. However, please contact one of the editors before doing so. Commercial reproduction of any article requires written permission.

ON THE COVER

Pictured on the cover are Henzlik Hall, Mabel Lee Hall and the Barkley Memorial Center. These buildings all house programs in Teachers College at the **University of Nebraska-Lincoln**. Teachers College consists of six departments: Curriculum and Instruction, Educational Administration, Educational Psychology; Health, Physical Education and Recreation; Special Education and Communication Disorders, and Vocational and Adult Education.

The College is highly respected for its programs preparing students to become teachers, administrators, and specialists who serve in many areas of education. Within the program are more than 50 different specialties in classroom teaching leading to certification. By working closely with public and private schools, Teachers College has developed an innovative program that permits its students to gain classroom experience early in their University studies.

The College is a center for educational research and investigation. The viable products of these efforts are put to use in the instructional programs, in the development of curriculum materials, and in service to the total educational effort both within and outside the state.

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hvattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 6, No. 1 * Winter 1993

FEATURE

Confidential and Privileged Communications: Legal and Ethical Concepts in Research
By Costas J. Dimitrius, Auburn University, and John A. Brown, The Citadel
2

ARTICLES

New Direction in Research on Teacher and Student Expectations
By Thomas L. Good, University of Missouri-Columbia
7

Both Sides Now: Interpreting Beta Weights

"Beta" Weights Should Be Used to Interpret Regression Variates and to Assess In-Context Variable Importance
By Richard J. Harris, University of New Mexico

Cautions and Conditions for Interpreting Weighting Coefficients
By Keith McNeil, New Mexico State University
11

MWERA Communication and Update
15

In Response to the MWER Special Multicultural Education Issue
By Brant Abrahamson, Riverside-Brookfield High School
16

Reflections on The Unschooled Mind: An Interview with Howard Gardner
By Jacqueline Anglin, Berry College
18

Teacher Assessment Literacy: Teacher's Competencies in the Educational Assessment of Students
By Barbara S. Plake, University of Nebraska-Lincoln
21

Portfolio Assessment in our Schools: Implementation, Advantages, and Concerns
By Carole Newman, Lynn Smolen, The University of Akron
28

Voices in Education
Inside Back Cover

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Confidential and Privileged Communications: Legal and Ethical Concepts in Research

By Costas J. Douvanis, Auburn University, and John A. Brown, The Citadel

The educational researcher is faced with numerous legal and ethical problems when attempting to conduct a study involving human subjects. The necessity of balancing the researcher's desire to publish full and complete data while preserving the confidentiality of the research subject or subjects is a major problem that must be addressed. Human subject researchers are aware that many of their studies require full disclosure of information supplied by their subjects, and this information is dependent largely upon the researchers' guarantee of subject anonymity. The issue of anonymity and confidentiality becomes increasingly sensitive and important when dealing with under-age subjects. One need only scan professional journals in the field of education to see the increasing interest and research being done in areas such as AIDS and sexually-transmitted diseases among school-age children, dropouts and at-risk students, special populations, and drug and alcohol abuse. All of these topics require full and complete cooperation and trust between researcher and subject. It can be argued that this trust and cooperation is possible only when confidentiality can be assured.

Confidentiality is a broad term for that ethical principle which determines the manner in which information received by a researcher is recorded and disseminated. The concept of privilege is frequently included as a subset of confidentiality, and although all privileged communications are confidential, not all confidential communications are privileged. A second subset of this triumvirate is privacy. Privacy combines both ethical and legal concepts, as well as the constitutional protections of the Fourth Amendment. However, this inquiry will focus primarily on the nature and present legal status of both confidential and privileged communications. Specific application of this inquiry to educational research will also be addressed.

Confidentiality and Privilege

For purposes of categorization, confidentiality is an ethical concept while privileged communication is a legal concept. This generalization works well for this inquiry, although there is a body of case law which defines the legal parameters of confidentiality as well as delineating the legal boundaries of privileged communication. In general, however, confidentiality is controlled by custom within the specific profession: written codes of ethics and agreements (written or oral) between the researcher and the human subjects used in the research study. Privileged communication is strictly defined by statute and case law. Breaches may be punished by legal rather than private sanctions.

Those researchers who are in receipt of confidential information may, under certain circumstances, be compelled to reveal the source and nature of that communication. For example, a judge might order a researcher to reveal information in the research studies of minors or student drug use. However, recipients of privileged communications are not required to reveal any aspect of that communication. In fact, those persons breaching privileged communications may be subject to severe sanctions.

Privileged communication has been defined by various courts and includes the following three elements with court references. First of all, the communication reveals confidential information to a person who has legal privilege to receive such communication. Specifically, it is communications which "... have an element of confidentiality between the person holding privilege and the person to whom the communication is being made...," *Dan*. Secondly, the communication is one which under normal circumstances would, if revealed, be defamatory or incriminating (*Skinner*). The final element involves the proper motivation and circumstances of such privileged communications. It is communications which are "...made upon a proper occasion, from a proper motive, in a proper manner and based on reasonable and proper cause," *Baird*.

The Importance of Confidentiality and Privilege

The involvement of human research subjects produces a conflict between the researcher's absolute search for knowledge and the individual's right to privacy. The researcher's quest is to obtain information which is given freely and unrestrained, while protecting and preserving the privacy rights of the individual. Candor and truthfulness are important statistical considerations. Wigmore argued that the purpose of confidentiality in the law is to "...secure freedom from apprehension in the mind of the one desiring to communicate" (Wigmore, §2340, at 670). It is this freedom that educational researchers must obtain and encourage to engage in meaningful and valid research.

However, we live in a litigous society. People are more likely to pursue legal remedies for alleged wrongs than in years past. Although presently, educational researchers are not prime targets for this litigation, the overall expansion of legal problems in many other areas and professions necessitate a closer examination of the topic of "confidential and privileged communications."

Methodology

The purpose of this study was to ascertain the status of confidential and privileged communications in educational research and to determine whether or not there exists a common standard that would guide and legally protect researchers who use human subjects.

A (*Psych Lit*) review of current social sciences literature revealed that researchers in the disciplines of health care, psychology and psychotherapy have clear, codified standards and guidelines regarding the nature of confidential and privileged communications. Although it was assumed that there existed a similar formalized code or guidelines for educational research, a search conducted through *ERIC*, the *Current Index of Journals in Education*, and *Wilson's* produced only seven articles dealing with privilege and confidentiality in educational research. These articles were either of such limited scope (e.g., the use of deceit as a research method) or dealt with psychological research as opposed to educational research, and were determined to be of no value for the topic of this study. A review of the *Current Index of Legal Journals* indicated a wealth of articles dealing with the privileged communications but only as related to the medical and legal professions and the clergy.

The lack of specific guidance for educational researchers was verified by a telephone call to the American Education Research Association (1991), which indicated that the AERA had no such uniform code. However, AERA plans to present a code for discussion at various meetings held in 1992.

This article explores relevant case law regarding the nature of confidentiality and privilege in educational research. When conducting legal research, the best initial strategy may be to try to understand the basic nature of the concept rather than merely ascertain the current status of the law. A review of several legal encyclopedias revealed distinct meanings for each of the terms "confidential," "privilege," and "privacy" when referring to communications. *Black's Law Dictionary* provided a good working definition of the three terms.

> *Privileged communications:* Those statements made by certain persons with a protected relationship such as husband-wife, attorney-client, confessor-penitent and the like which the law protects from forced disclosure on the witness stand at the option of the witness client, spouse, penitent. The extent of the privilege is governed by state statute.
>
> *Confidentiality:* State or quality of being confidential; treated as private and not for publication. Confidential communication is statement made under circumstances showing that speaker intended statement only for the ears of the person addressed.
>
> *Privacy, right of:* The right to be left alone; the right of a person to be free from unwarranted publicity.

A case law definition of privileged communication is that it is a communication"...which, except for the circumstances under which it is made, may be defamatory and actionable" *Skinner v. Pistoria*.

The Distinction Between Confidentiality and Privilege

Confidentiality is the type of protection which educational researchers are most likely to offer their subjects as a condition for participating in their research. In any profession or discipline, confidentiality is an ethical standard wherein the researcher agrees not to divulge any information provided by the subject except under those mutually agreed upon conditions. If the subject is a minor, the researcher has an additional duty to inform the subjects' parents of the request.

The concept with which most educational researchers are familiar is confidentiality, which is defined as "...that which is originated or maintained in strict secrecy or privacy" (*Black's*). For purposes of illustration, the following scenario will be examined:

> "My name is Doctor Anyone. I am conducting a research study on the effects of testing students at your school. I would like to interview you concerning your experiences and feelings concerning this study. It is important to my study that your responses be truthful and candid. As such, when I reduce my research to writing, I promise you that everything you tell me will be held in the strictest confidence."

The basic problem in this scenario is that the researcher has no authority to make such a blanket guarantee of confidentiality. Additionally, the blanket guarantee of confidentiality renders the data of absolutely no value to the researcher. Data that cannot be revealed is useless to the collector. Furthermore, the researcher may be compelled by court order to reveal both the source and nature of confidential information, if the court deems it necessary in order to prevent harm or for other valid legal reasons.

This raises the possibility that the researcher may be confronted with the dilemma of refusing the court order and being held in contempt of court, which can result in civil penalties, or in the extreme, incarceration. The other alternative is to comply with the court order and face exposure to litigation by the person whose confidentiality has been breached. The cause of action upon which the case would stand would be the theory of breach of implied contract. A contract can be argued to exist because an offer has been made (i.e., give me information and I will keep it confidential); an acceptance is tendered (i.e., the giving of the information); and there is consideration (the subject is doing something he or she has no duty to do). Ergo a contract exists and divulging the information by the researcher constitutes a breach creating a cause of action at law.

The distinction between confidentiality and privilege is complicated by the fact that the terms are often used interchangeably. Privileged communications are protected by statute or

(continued on page 4)

case law. The information given to an individual who is in a privileged capacity may not be disclosed in court proceedings or in any other manner unless specifically waived by the person to whom the protection of privilege ensures.

Educational researchers are not protected by either statute or professional code and when they breach confidential communications, they can be subjected to basically ethical sanctions or to the threat of civil action. In contrast, those who receive privileged communications are subject to more severe professional sanctions. The confidential nature of attorney-client privilege must be maintained even when the attorney has knowledge which conflicts with his sworn oath of allegiance to the court. For example, a defendant in a criminal trial communicated to his attorney an intention to offer perjured testimony in an attempt to obtain his acquittal. The attorney withdrew from the case and informed the judge of such perjured testimony. The client appealed his conviction because the breach of privilege denied him his right to effective counsel and was a breach of the attorney's ethical code. An appellate court agreed with the client (defendant) and said that "...counsel owes the client a duty of loyalty...." Furthermore, the lawyer was censured for unethical conduct by his state bar association (*Shurr v. Whiteside*).

A Rationale for Privilege in Educational Research

Privilege for educational researchers has not been conferred by statute or by case law although claims of privilege have been made by academicians in order to protect the identity of their subjects. Educational researchers in certain areas of inquiry may have relevant and legitimate need to protect the identity of their subjects and/or the scope of their research. Research studies in areas such as "at risk youth" and "students with AIDS" often provide great practical and societal value. For example, researchers of "at risk" youth have a legitimate need to protect the identity of their subjects, who are also likely to be minors. If "privilege" is unavailable, the cost to society may be substantial if participants are unwilling to subject themselves to possible public scrutiny. Premature public disclosure of the research findings could also compromise the entire project.

It is difficult to balance the benefit to society against the possible value to an individual litigant seeking the identity of a subject or subjects. In the past 20 years, we have observed a moderate erosion of privilege by the enactment of statutes that provide for mandatory reporting of suspected child abuse and client communications in which the attorney (ABA Code) or psychotherapist believes that serious bodily harm to a third party is imminent (*Tarasoff v. Board of Regents*). These exceptions to privilege are logical and serve the public interest, unlike other claims for protection of the work product. In the Tarasoff case, a psychotherapist was found to be civilly liable to a third party for money damages because he did not notify the authorities or the third party of threats of violence made by his client against the third party which he *reasonably believed to be true*.

It is interesting to note that the media, which is a substantially commercial rather than an educational enterprise, has claimed, with some success, a media source privilege. Proponents of this privilege, which holds that the media should not be required to disclose the identities of their confidential sources of information, argue that in addition to First Amendment considerations, to require such disclosure would result in the inability to gather important information. Communicants, knowing that their identities would be made public would be unlikely to come forward. Numerous state legislatures have enacted laws to protect journalists from being compelled to reveal the identities of confidential sources (26, including Alabama. Ala. Code §12-21-142), as well as notes and records (*In re Taylor*, and Cal. Evid. Code §1070(c)). In the case of *Branzburg v. Hayes*, a dissent by Justices Stewart, Brennan, and Marshall opined that the First Amendment implied a right of confidentiality between a reporter and his source. Justice Douglas went further and stated that the First Amendment prevented such a disclosure. The majority, however, held that the First Amendment does not relieve a journalist of the obligation to respond to a grand jury subpoena and to answer questions relevant to a criminal investigation. Nonetheless, the dissent has been seized upon by the lower courts to extend the media privilege in non-grand-jury-type situations.

In this context, there are two valid arguments for extending the media source privilege to educational research. These are that the ultimate objective of academic research is to publish the results of one's research and thereby benefit society through its findings and implications (*United States of America v. Doe*), and that research can best be done with a guarantee of confidentiality in order to protect the subject's identity when sufficient reason for such protection has been shown (*Richards of Rockford v. Pacific Gas and Electric Co.*). The state of Delaware includes "scholars" and "educators" among those who have the right to claim media source privilege without the necessity of publication. Other states have extended this protection to psychologists who are licensed and who hold a doctorate (Arizona). Still other states allow the courts to weigh the conflicting interests of the parties in determining whether privilege attaches.

Another argument for the extension of a limited privilege of confidentiality to educational researchers is that of academic freedom. The implication of such freedom carries with it the right to do research with the knowledge that their data and the identity of their sources are protected by the First Amendment. Two Supreme Court cases endorse the constitutional protection of the First Amendment to academic freedom (*Kevishian v. Board of Regents*) and indicate that unregulated research is an essential component of such academic freedom (*Sweezey v. New Hampshire*). By implication, the words "unregulated research" would reasonably protect the confidential identity and sources of data received by the researcher.

At least one court has addressed the idea of a "scholar's privilege" but did not look with favor on such a concept. The United States Court of Appeals for the Second Circuit, held that

"...a scholar's privilege, if it exists, requires a threshold

showing of a detailed description of the nature and seriousness of the scholarly study in question, of the methodology employed, of the need for assurances of confidentiality to various sources to conduct the study, and the fact that the disclosure requested by the subpoena will seriously impinge on that confidentiality." In re *Grand Jury Subpoena DTD January 4, 1984.*

In this case a Ph.D. candidate was subpoenaed to produce information he had been gathering for his dissertation. The information had been obtained with a promise of confidentiality. The lower court quashed the subpoena citing a scholar's privilege, but the appellate court reversed stating that there was "...insufficient record whether a scholar's privilege exists, much less to provide grounds for applying it..." in this case. The lower court, in an opinion by Chief Judge Jack Weinstein, had "...quashed the subpoena on the basis of a limited federal scholar's privilege analogous to the limited news reporter's privilege recognized in *Branzburg*."

The appellate court acknowledged that the Federal Rules of Evidence "...set forth a general rule covering all recognized common-law privileges and empowers federal courts to fashion testimonial privileges, guided by the 'principles of the common law as...interpreted...in the light of reason and experience'" Fed.R.Evid. 501. The court also noted that the Senate Report enacting Fed.R.Evid. 501 stated that "judicial recognition of a privilege based on a confidential relationship...should be determined on a case-to-case basis." The court found no such basis in this instance, but the Rule may hold hope for the development of a "scholar's privilege" under the right circumstances.

Wigmore, in his treatise on the rules of evidence, stated that there are four conditions which must occur for a privilege to exist. These are:

> The communications must originate in a confidence that they will not be disclosed.
>
> The element of confidentiality must be essential to the full and satisfactory maintenance of the relation of the parties.
>
> The relation must be one which in the opinion of the community ought to be sedulously fostered.
>
> The injury that would inure to the relation by the disclosure of the communications must be greater than benefit thereby gained for the correct disposal of litigation (Wigmore, ss2285, 1961).

It can be argued that scholarly research meets all of these criteria, and therefore is entitled to protection of the law.

Confidentiality and Privilege in Educational Research

Legislative bodies have not completely ignored the realities of research in sensitive subject areas. For example, there is federal protection for drug and mental health research (21 U.S.C. ss 872(c); 42 U.S.C. §242 a (a)) and states such as California (Cal. Health and Safety Code ss 11603), Texas (Tex.Rev.Civ.Stat.Ann. art. 4476-15, §.02(c)) and New York (N.Y. Pub. Health Law ss 3371) have similar statutes for drug research. It is important to note that subject identities and research records, except in compelling cases of public interest, are protected. However, these federal and state protections are restricted in their scope and fail to address other social problems of interest to educational researchers. In the absence of specific statutory protections, courts are generally unwilling to extend privilege to academic researchers as noted in *In re Grand Jury Subpoena.*

There has not been a rash of litigation involving cases where confidentiality between researcher and subject has been breached, either inadvertently, negligently, or by court order, although there have been some reported cases of litigation involving academic researchers in the capacity of an expert witness (*Wright v. Jeep Corporation*) or as a third party witness to an event (*Doe*). Academic/educational researchers have claimed that the work product of their research is privileged and immune from forced disclosure. However, the courts have not honored such claims for protection. For example, the researcher of *In re Grand Jury*, who was researching the activities of a business was called before a grand jury which was investigating a suspicious fire at said business. The researcher was forced to testify over his objections when the court refused to find any type of privilege which could be asserted. In *United States v. Doe*, a historian was compelled to testify as to his access to the Pentagon Papers, although he claimed that the documents had been provided to him by a confidential source to whom he had promised anonymity. In a third case, an independent researcher was subpoenaed by a litigant in a products liability case who was seeking such research in order to use it as "expert" testimony in a civil action for damages. The researcher claimed that his work product was privileged information and claimed protection for both confidential and non-confidential communication. The court held that no privilege attached and ruled that the research could be compelled to reveal the nature and source of his data (*Wright*).

Societal and educational justifications support the claim for an academic/education assertion of privilege based on publication of the information. In research (and subsequent publication) dealing with sensitive subjects and important societal areas such as sexual behavior or drug use, one can argue for privilege for those scholars conducting such studies. The argument for such privilege asserts potential lack of information if subjects fear that such information may be made public.

Research leading to publication should be given the same protection which is afforded to the media (*Zerelli v. Smith*). Some courts have extended this privilege to academic researchers to a limited extent, notably the First Circuit (*Doe*) and the California federal district for the Northern District (*Richards*), but they remain in a distinct minority. Delaware is the only state to specifically protect "educators" under the umbrella media protection standard (Del. Code Ann. Tit. 10 ss4320). Federal Rule of Evidence 501

(continued on page 6)

certainly provides a starting point for the development of a federal research privilege if the proper case arises.

When research is not published (or not intended to be published), no media privilege would apply. In this situation, the academic researcher must rely upon the concept of academic freedom. In *Sweezy*, *Keyishian*, and *EEOC v. Notre Dame du Lac*, the courts have endorsed the concept of academic freedom as a special concern of the First Amendment and that research is an important concern of academic freedom. From these cases, it can be logically argued that lack of privilege serves to restrict the freedom to conduct educational research. Thus, it can be argued that educators should be afforded the same protections as doctors, lawyers, and the clergy in order to properly and optimally do their work.

Conclusions

This article presents valid arguments for extending a limited privilege of confidentiality to educational researchers. It is opined that educators should be afforded the same protections as doctors, lawyers, and the clergy in order to properly and optimally do their work. However, educational researchers need a clear set of guidelines with regard to the nature and extent of confidentiality in their work. At present, there exists a hodge-podge of codes which guide individual researchers depending upon their discipline, their state of residence, or faculty handbook. A proposed code for educational researchers would include the following six provisions:

1. All research regarding minors would be strictly privileged except to their parents (at least until the child reaches age eighteen) and in accordance with applicable child-abuse reporting laws.
2. Researchers would be required to advise subjects of the nature of the study; the plans for publication and dissemination; and a promise of confidentiality to the extent that it can be met in accordance with the law.
3. The confidentiality of public and educational research be given greater protection than that of private or commercial research.
4. The privilege be extended to civil actions but that the legal exceptions to criminal actions shall apply.
5. A privilege analogous to the media source privilege be included in this code.
6. If an educational researcher is legally compelled to breach a promise of confidentiality, then the researcher shall be given civil immunity from litigation, similar to the various child abuse reporting laws.

Educational research is an integral and essential aspect of the educational process. Educators must be free to pursue knowledge without fear that the product of their research can be made public without the mutual consent of their subjects or the researcher. Since research is an integral part of academic freedom, there are strong societal reasons for the extension of privileged and confidential communications to academic researchers. The societal value generated by educational research and the importance of such information argue convincingly the need for statutory protection for educational researchers.

As in other professions, the concept of privilege should not be an absolute. The American Bar Association Code of Ethics states that the privilege does not extend in the case of imminent danger to a third person. A similar limitation exists in psychiatry (*Tarasoff*). This code is sufficiently delimiting as a model code for educational research.

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New Direction in Research on Teacher and Student Expectations

By Thomas L. Good, University of Missouri-Columbia

In this article I discuss a few new ways in which performance expectations might be communicated in the classroom. However, I should say that expectations can be expressed in various ways and that expectations can be too high or too low and that the same behavior can be interpreted in fundamentally different ways by different types of students. In general most extant research has focused on how teachers communicate different expectations to students believed to be more and less capable (see Good & Brophy, 1991). This research on teacher expectations has focused on dyadic interaction (teacher-individual student interaction) in educational as well as social psychology experiment (see Jussim, 1990). Further, there has been some inquiry as to how teachers communicate differential expectations to groups of students (e.g., the high and low reading group) and there has been research on ways teachers react to different classes (e.g., general math vs. algebra; English vs. honors English).

In this article I discuss new and important areas where expectancy effects can be explored. Specifically, I outline six important areas of expectations that would merit programmatic research. These areas are (1) teachers' knowledge of subject matter; (2) teachers' decision making about content to present, and how fast to go through the curriculum; (3) teachers use of the management system; (4) variations in teachers' expectations over time; (5) classroom task variables; and (6) students' conceptions of teachers.

Selection of Curriculum Content

Many educators have contended that textbooks define the curriculum, although recent research challenges this simplistic view and suggests that teachers act as decision makers, modifying the curriculum in relation to factors such as teachers' beliefs about students' aptitude, their instructional intentions, and their subject-matter knowledge. If teachers influence the curriculum, then their decisions about curriculum help to determine performance expectations for students, as do teacher behaviors and activity structures.

According to Freeman and Porter (1989), teachers make many decisions that influence how much content students receive. For example, teachers decide how much time to spend on mathematics on a certain day, what topics should be taught, how much time should be allocated for each topic, whether all students are taught the same topics, and in what order topics should be presented.

Freeman and Porter (1989) conducted detailed case studies of how four fourth-grade teachers used textbooks to make decisions about what mathematics content to teach. One particularly interesting comparison of two teachers who used the same textbook showed that they presented substantially different content to students. One teacher (A) taught mathematics about four weeks longer than did the other teacher (B) over a school year. Teacher A utilized her 7,764 minutes in the following ways: concepts—1,806 (23.3 percent); skills—4,588 (59.1 percent); and applications—1,370 (17.6 percent). In contrast, teacher B allocated mathematics time in the following way: concepts—1,151 (17.0 percent); skills—4,765 (70.2 percent), and applications—869 (12.8 percent). Thus, students in class A received 13 additional lessons on concepts and 10 additional lessons on applications.

Freeman and Porter also contrasted time allocation in class A (7,764 minutes) with that in teacher C's class, which was divided into two instructional groups. Teacher C provided only 5,830 minutes of instruction for the low group. Using 50 minutes as a class unit, the low group in class C received 7½ *fewer* weeks of instruction than did students in class A. The time spent on instruction and the focus of instruction seem prime ways in which expectations might be communicated. Subsequent research could profitably attempt to integrate teachers' decision about how much and what type of content to present with teachers' expectations for students (how much students are likely to learn, etc.).

Teachers' Subject-Matter Knowledge

Teachers' subject-matter knowledge is likely an important factor affecting the performance expectations communicated to students. Because teachers know more about some subjects or concepts than others, teachers' beliefs about subject matter and how to present it to students would probably affect whether or not they set appropriate performance expectations for students (what students should learn and in what way).

Carlsen (1991) documented the effects of four beginning biology teachers' subject-matter knowledge on discourse in their classrooms as they taught eight science lessons. Teachers taught an equal number of lessons on topics about which they had either high or low knowledge. Beginning teachers were more likely to use lectures and relatively open-ended laboratory activities to teach high-knowledge topics than to teach low-knowledge topics. Teachers were more likely to use seatwork assignments and non-laboratory group projects for topics about which they had low knowledge.

The findings imply that choice of instructional activity affects students' participation in classroom discussion. Teachers used lectures and laboratory activities, which are characterized by high rates of student questioning, with topics they were knowledgeable about. They tended to use classroom activities that involved few student questions when they were unfamiliar with the subject matter. Furthermore, because students have to depend on

(continued on page 8)

their private knowledge of science when learning topics about which teachers have low knowledge, it is unlikely that teachers will recognize and correct students' misconceptions about these topics. During seatwork or cooperative learning activities on these topics, students will likely compound one another's misconceptions, errors, etc.

Carlsen's results are especially intriguing in that they illustrate that because all teachers, and especially beginning teachers, have inadequate knowledge in some areas, teachers must develop strategies for teaching content that they are still learning themselves. These strategies might include using additional sources (to the textbook), bringing in guest teachers who are more knowledgeable, telling students that this is an area about which they are still learning, and presenting to students the questions that the teachers are using to structure the unit (and their own learning).

Research that examines teachers' performance expectations for individual students along with teachers' subject-matter knowledge would be profitable. When teachers instruct students in topics about which teachers have little knowledge, they may exaggerate differential treatment (i.e., avoid unpredictable questions by low achievers, or overly depend on students believed to be more capable). Furthermore, accountability systems and task structures teachers select may be a function of their subject-matter knowledge.

Teachers Use of Classroom Management

There is considerable consensus in the field that classroom management, as discussed by Kounin (1970), is desirable, effective teaching. Basically, the Kounin approach to management argues that teachers need to be proactive (not reactive) and that good managers are defined by their ability to prevent misbehavior rather than by skills for dealing with misbehavior *per se*. Elsewhere it has been argued that over-reliance on teacher controlled variables (alerting, accountability) can suppress students ability for self-regulation. McCaslin and Good (1992) have argued the case this way "As long as the teacher controls the management system (e.g., does the alerting and maintains the accountability), students cannot learn self-regulation, problem-solving and self-control" (p. 13). McCaslin and Good see classroom teacher management as an instructional scaffold that needs to be reduced over time.

In terms of expectancy variables it would be informative to determine through clinical interviews how students vary in their reactions to teachers who notably differ in their use of preventive management behaviors (e.g., high alerting—low accountability; low alerting—high accountability; high alerting—high accountability; etc.).

Individual student analysis of management behavior would also be instructive. In a low alerting teacher's classroom there is a significant message for students who receive a disproportionate share of alerting (you can't be trusted, you need help). Although most accounts of preventive management discuss how the teacher should treat the class, what might be equally instructive is the distribution of such behaviors that individual students receive.

Good's Passivity Model

Some students receive low expectations so consistently that they appear to internalize these expectations. Studies of expectations have increasingly emphasized how students internalize teachers' expectations, and models have been developed for exploring mediation effects (e.g., Cooper, 1985; Darley & Fazio, 1980; Jussim, 1986). Good's (1981) passivity model suggested that certain forms of teacher treatment induce passivity in low-achieving students. Over time, differences in the ways teachers treat low achievers may reduce their efforts and contribute to a passive learning style (for example, in the third grade a student is praised or finds teacher acceptance for virtually any verbalization, but in the fourth grade the student is seldom praised and is criticized frequently). Other teacher behaviors may compound this problem. Low-achieving students who are called on frequently one year (the teacher believes they need to participate if they are to learn) but infrequently the following year (the teacher does not want to embarrass them) may find it confusing to adjust to different role definitions. Ironically, those students who have the least capacity to adapt may be asked to make the most adjustments as they move from classroom to classroom. The greater variation among teachers in interaction with low achievers (in contrast to the more similar patterns of behavior that high-achieving students experience from different teachers) may occur because teachers agree less about how to respond to students who do not learn readily. Teachers may treat low-achieving students inconsistently over the course of the school year as they try one approach after another (having given up prematurely) in an attempt to find something that works.

Even within a given year, low achievers are asked to adjust to more varied expectations. This may be true in part because many low achievers have several teachers (in addition to the regular teacher, they may have a remedial mathematics, reading, or speech teacher). The chance for different expectations is thus enhanced.

When teachers provide fewer chances for lower achievers to participate in public discussion, wait less time for them to respond when they are called on (even though these students may need more time to think and form an answer), or criticize lows more per incorrect answer and praise them less per correct answer, implications are similar. It seems that a good strategy for students who face such conditions would be not to volunteer or not to respond when called on. Students are discouraged from taking risks under such an instructional system (Good, 1981). To the extent that students are motivated to reduce risk and ambiguity—and many argue that students are strongly motivated to do so (Doyle, 1983)—students would likely become more passive in order to reduce the risk of critical teacher feedback.

Good, Slavings, Harel, and Emerson (1987) found that low achievers were just as likely to ask questions as other students in kindergarten classes, but asked significantly fewer questions than their classmates in upper-elementary and secondary classes. Similarly, in a study involving grades 2, 4, and 6, Newman and Goldin (1990) found that among sixth graders, the lowest achievers had both the greatest perceived need for help and the greatest resistance

to asking for help. Students' ambivalence about asking questions or getting help from teachers becomes especially acute at adolescence, when they are both more concerned about how they are perceived by peers and more sensitive to the costs as well as the benefits of help-seeking.

Teachers' Expectations Over Time

Good's passivity model asserts that sharp differences in teacher expectations may undermine student performance. Relatively little research has focused on students' classroom experience over consecutive years, and no study has examined students' reactions to differential teacher expectations over consecutive years prior to the work of Midgley, Feldlaufer, and Eccles (1989).

Midgley et al. (1989) conducted a longitudinal study of 1,329 elementary and junior high students' self- and task-related beliefs in mathematics as a function of teachers' efficacy beliefs. They found that, within the school year, the rate of change of students' expectancies, perceived performance, and perceived task difficulty in math differed at years 1 and 2 of the study, depending on their teachers' efficacy beliefs before and after students moved from elementary school to junior high. Students *who moved from high- to low-efficacy math teachers* during the transition ended the junior high year with the lowest expectancies in perceived performance (even lower than students who had low-efficacy teachers both years) and the highest perceptions of task difficulty. The differences in pre- and post-transitional teachers' views of their efficacy had more of an effect on low-achieving than on high-achieving students' beliefs about mathematics. In the spring of both years, students with more efficacious teachers had higher expectancies for and perceptions of their performance in math than did students with less efficacious teachers. Furthermore, in the spring of their seventh-grade year, students with more efficacious teachers rated math as less difficult than did students with less efficacious teachers.

There is growing evidence that students' views of their potential to understand subject matter and perform in classrooms are not simply a product of the current classroom environment but are also influenced by previous school experiences. Fetterman (1990) found that fifth-grade teachers were unable to implement a process approach (teaching students to understand content, explain solution paths) in part because fourth-grade teachers had encouraged a product approach (quick right answers) and also because of students' expectations about what would happen in the sixth grade at the middle school.

Classroom Task Variables

Researchers have emphasized that how teachers structure the classroom and select academic work tasks influences the performance expectations that students will develop. Thus just as teachers communicate expectations to students so does the way in which classroom activities are structured. According to Bossert (1977), teachers use various activity structures such as teacher-led recitations, class tasks (assigned to the whole class), and multi-tasks (done independently or in small groups). He notes that activity structures affect tasks and social relationships. For example, heavy reliance on recitation structures requires teachers to exercise their formal authority frequently and publicly; hence, in such settings teachers are more likely to communicate differential performance expectations more explicitly.

Doyle (1982) argues that students generally take seriously only work for which they are held accountable. Students' expectations are tied to the work that teachers check and to work they believe they will be tested. Teachers must realize the importance of accountability and explore ways to use it creatively and constructively. For example, ways in which teachers test and assign grades communicate expectations—perhaps more directly than face-to-face interactions. If teachers routinely assign memory work, students will spend their time memorizing isolated facts. In contrast, if teachers require students to integrate and organize information in order to understand concepts and complete tasks, quite different performance expectations are communicated. Despite the potential for integrating expectation research with the study of activity structures and work tasks, there has been little work in this area.

As an example of research in this area, Blumenfeld and Meece (1988) observed middle school science lessons and categorized them in terms of content difficulty, social organization, and procedural complexity. These lesson types were then examined in terms of the extent to which they increased or decreased cognitive engagement as reported by 191 students (investigators used both questionnaires and interviews). Students reported more high-level strategy use with cognitively demanding tasks and tasks that did not involve materials manipulation. Qualitative examinations and comparisons between task dimensions and teacher behaviors showed that teacher behaviors can modify cognitive task objectives or complement them to influence students' engagement.

Meece, Blumenfeld, and Hoyle (1988) assessed the extent to which students' goal orientations mediated their cognitive engagement in science activities. Two hundred and seventy-five fifth- and sixth-grade students from 10 classrooms responded to questionnaires that assessed their goal orientation and use of high-level or effort-minimizing learning strategies while completing six science activities. Students who stressed task-mastery goals reported more active task engagement. Students who emphasized pleasing the teacher, avoiding work, or gaining social recognition reported lower cognitive engagement. The study indicated the important effects that students' needs, interests, beliefs, and self-perceptions have on their responses to classroom tasks.

Since these data are correlational, they should be interpreted with caution. For example, students who value work may develop appropriate value structures and an interest in task completion because they have completed tasks successfully in the past. Whether the value structures precede or follow task involvement merits research.

(continued on page 10)

Students' Conceptions of Teachers

Students often hold misconceptions about task requirements. King (1989) and Mulryan (1989) found that some students are passive during small-group work because they do not understand task requirements. It is also possible that students' perceptions and expectations of teachers may also influence learning outcomes. Jamieson, Lydon, Stewart, and Zanna (1987) conducted a field experiment to see if students' induced expectations for teachers would enhance students' perceptions and performance. Data were collected in four high school classes at the end of a three-week teaching unit. Students in two classrooms had been given initial positive expectations about their new teacher's ability and motivation; students in the two control classrooms received no expectation information about the teacher. The same teacher taught all four classes in a three-week unit on oral and written English skills. Students in the two experimental classrooms engaged in more appropriate and less inappropriate nonverbal behavior and received higher final grades on the unit.

The authors acknowledged that they do not know how the treatment affected performance. That is, students in experimental classes may have been more attentive to the teacher, who then may have assumed that the students were more able. An alternate explanation is that because students believed they were working with a talented teacher, they assumed they would learn more and applied themselves more diligently. At any rate, the positive expectations that were communicated to students about their teacher influenced both their behavior and academic performance in the class. The study highlights the reciprocal effects of classroom behavior—students and teachers influence one another in similar ways.

Summary

The construct of performance expectations provides a useful way to organize knowledge about classroom instruction and learning. Beliefs about ability and appropriate instructional goals may well affect how classroom participants attend to and interpret various aspects of classroom life.

It has been argued that teachers form and communicate performance expectations to individual students, groups of students, and entire classes of students. Groups of teachers (e.g., fifth-, sixth-, and seventh-grade mathematics teachers), or all the teachers, in a school can create performance expectations for students over consecutive years. Few studies have examined the transmission of teachers' expectations across consecutive years.

Research has focused on how teachers communicate expectations during classroom interactions. However, this article has also made it clear that teachers communicate performance expectations through selection of academic content to be studied, task and content assignments, grouping patterns, and accountability systems.

Teachers' beliefs about subject matter and their subject-matter knowledge may also affect teachers' and students' performance expectations. In some cases teachers' lack of subject-matter knowledge may limit instruction and influence the communication of low expectations more than do teachers' beliefs about students' abilities. In combination, these two sets of variables might cause students to internalize low performance expectations.

Students perceive and interpret classroom behavior, tasks, and content assignments. Although there has been less research on students than on teachers, there is evidence that students perceive differential teacher behavior toward students and are aware of the meaning of such behavior. Less is known about how students react to tasks and form subject-matter beliefs. Integrative work that focuses on instructional behavior and beliefs, curriculum tasks, and student perceptions is needed.

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(continued on page 17)

Both Sides Now: Interpreting Beta Weights

Introducing the Debate

Isadore Newman, Co-Editor

There has been an ongoing debate surrounding the use and interpretability of beta weights. At the end of each debate there seems to be apparent agreement between debators on each other's major points, but the final conclusion restates their disagreement about whether or not beta weights should be interpreted. The two viewpoints being expressed below are representative of this controversy. It appears that the disagreement is not whether beta weights are interpretable, but rather, under what conditions they should be interpreted. Harris' position is that beta weights should be interpreted and that they have very clear mathematical meaning, while cautioning that beta weights can be inappropriately used as a good indice of "overall importance" of individual predictors. McNeil presents three examples and cautions how beta weights have been and can be easily misinterpreted. However, both agree that while beta weights are often misinterpreted, they do have very useful and clear interpretations under appropriate conditions. These positions provide the applied researchers with excellent guidelines for the use and interpretation of the controversial beta weight.

"Beta" Weights Should Be Used to Interpret Regression Variates and to Assess In-Context Variable Importance

Richard J. Harris, University of New Mexico

Of course "beta" weights (which I will henceforth refer to as *z*-score regression coefficients, or b_zs)[1] are interpretable! They are, in fact, much better than zero-order correlations (r_{iy}s) or structure coefficients ($r_{i\hat{y}}$s, also known as the *loadings* of the X_is on $\hat{y}$) as bases for interpreting regression variates; and they constitute one of the two logical indices of the importance of individual predictors within the context of the entire set of predictors. On the other hand, b_zs should *not* be interpreted as indices of the relative merits of individual predictors that are to be used singly (for which zero-order correlations or the structure coefficients to which they are directly proportional are the indices of choice), nor as especially good indices of the "overall importance" of individual predictors.

Interpreting Regression Variates[2]

First, some basics: The process of interpreting a regression variate is essentially one of concept identification, with the test of whether we've got the concept "right" being whether the linear combination of measures implied by our interpretation rank orders the individual cases (more precisely, positions them along the real-number line) in the same way as does the regression variate itself. An excellent measure of the match between the two orderings of the cases (by the actual regression variate versus by the linear combination of the measures implied by our interpretation) is, of course, the correlation between the regression variate, $\hat{Y}$, and $\Sigma\, a_i X_i$. Since by definition $\hat{z}_y = \Sigma\, b_{zi} z_i$, an interpretation based on "beta" weights will yield a value of this correlation that is close to 1.0, while one based on the r_{iy}s, the structure coefficients (loadings), or any other set of combining weights will do less well—sometimes dramatically so. Another test of adequacy of our interpretation of the regression variate is whether it provides nearly the

(continued on page 12)

Cautions and Conditions for Interpreting Weighting Coefficients

Keith McNeil, New Mexico State University

To discuss the cautions and conditions for interpreting beta weights, three cases are provided in regression formation: (a) the treatment-control design, (b) single predictor design, and (c) the multiple predictor design.

Treatment-Control Design

If a treatment and control group are compared on a criterion Y, then the following regression model can be used:

$$\text{Case 1: } Y = a_0U + bT + E_1$$

The raw score weight, b, is the criterion difference between the control group and the treatment group. If another group of persons from the same population was given the same treatment and control, then we would expect approximately the same amount of difference in the outcome Y. The lower the R^2 value, the less the difference between means is, relative to the within variability, and this within variability depends on other variables not in the model. Therefore, we cannot predict accurately the effect for any one subject, just for the group. Indeed, we can only say that the treatment caused the b-unit difference between control and treatment.

Single Predictor Design

If a single predictor variable, X, is measured and a criterion variable Y is measured, we have a correlational design, and the following regression model can be used:

$$\text{Case 2: } Y = a_0U + bX + E_2$$

The raw score weight, b, is the slope of the line and is the change in Y for every unit change in X. The structure of Case 1

(continued on page 12)

308

"Beta" Weights Should Be Used *(continued)*

same level of predictability of Y that the regression variate itself delivers up, which is of course indexed by the squared correlation between Y and $\Sigma\, a_i X_i$. Since the b_is are explicitly derived so as to maximize this squared correlation, a b_i-based interpretation will yield a squared correlation closer to R^2 than will a loadings-based interpretation—with this difference sometimes being quite dramatic. (Harris, 1989, reports hypothetical data in which interpreting the regression weights yields a correlation of 1.0 both with the regression variate and with Y, while the loadings-based interpretation yields squared correlations of .20 with $\hat{Y}$ and Y.)

A number of properties follow from this concept-identification perspective. As has been amply demonstrated elsewhere (Harris, 1985, Examples 6.4 and 6.5; Harris, 1989, 1992).

(1) When there is a consistent relationship between a given set of variables and our outcome measure, that relationship will be uncovered by the regression coefficients, regardless of what other variables are included in our set of predictors; interpretations based on r_{iy}s, however, will be strongly affected by irrelevant variations in context.

(2) When situations involving identical r_{iy}s but varying greatly in the correlations among the predictors and thus in the linear combinations of measures that best predict Y are compared, our regression-coefficient-based interpretation will vary appropriately across these situations so as to reflect the differences in regression variates, while the loadings-based interpretation will inappropriately remain the same, thus failing to reflect the differences in the optimal way to predict Y.

(3) Relying on the obfuscation to interpret our regression variate or discriminant function leads to the interpretation of a given variable depending (strongly and inappropriately) on whether it is measured directly as an original variable or is instead uncovered in exploratory fashion as a linear combination of the original variables.

(4) Generalizing the principle underlying obfuscation-based interpretations—namely, that we should approximate our regression variate as $\Sigma\, r_{iy} X_i$, rather than as $\Sigma\, b_{z_i} X_i$—to path analysis would thereby forfeit any ability to uncover such phenomena as spurious correlation, indirect causation, and mediation.

Finally, I should point out the folly of the "schizophrenic approach" to interpretation of regression variates. A number of researchers (e.g., Huberty & Wisenbaker, 1992) recommend that we describe how scores on the regression variate or discriminant functions are generated via the regression coefficients, but use the r_{iy}s or (equivalently) the loadings to tell us what underlying "construct" the regression variate represents. If you find beguiling this treatment of what a variable "really is" as unrelated to how it rank orders individual cases, I urge you to read the "Canonical Cautionary" (Harris, 1989) for an example of ethologists running around measuring beak length but calling it total skull length.

Assessing Relative Importance of Predictors

As Darlington (1968) pointed out a couple of decades ago,

(continued on page 13)

Cautions and Conditions *(continued)*

and Case 2 model is exactly the same, the only difference is that the predictor variable in Case 1 has been manipulated. Since correlational data is *usually not manipulated*, one must be cautious, indeed avoid, the kind of causal interpretation made in Case 1. The subjects in Case 2 were not manipulated and therefore we do not know what the effects would be of making someone one unit higher on X, say one unit higher on "orneriness." How do people react to being made more (or less) ornery? And how does the change effect Y? We have not looked at those questions in Case 2. If we would have *experimentally* manipulated orneriness, then we would be back to Case 1.

Some statistics books indicate that "b" in Case 2 gives one an approximation of what would be the effect, but I know of no area of research that supports that notion. As my good friend Jack Kelly would say, "The proof is in the pudding," and here pudding is experimental manipulation.

Multiple Predictor Design

Now we are into the General Linear Model situation, the focus of this paper. Suppose one is interested in predicting grade 8 Math Achievement (MA) and uses beginning of grade 8 variables of Math IQ (MIQ), Math Anxiety (MANX), Gender, and Verbal IQ (VIQ), obtaining:

MA = 6 + 3 MIQ − 5 MANX + 3 GENDER − 2 VIQ

with an R^2 of .90 and individual correlations (r) with the criterion of

correlations	correlations squared
MIQ = .7	.49
MANX = .4	.16
GENDER = .20	.04
VIQ = .00	.00
	.69

Note that the sum of the bivariate correlations squared less than the R^2 of .90.

Also note that VIQ, while uncorrelated in the bivariate world with MA, is useful in the multivariate world. (Some would call VIQ here a "suppressor variable"; but I think that the data is telling us that the variable is just a good variable to have in the model).

Because of the issues in the above three paragraphs, one would not want to interpret the resulting weights of the bivariate correlations. As Harris (1992) suggests, "Multivariate statistical procedures have the darndest habit of doing what they are designed to do (considering context in finding optimal linear combinations), rather than simply confirming what we think we know from examining univariate statistics taken out of context, one variable at a time." (p. 11) I would go one step further and say that if one takes the multivariate stance by including multiple variables in a regression model, then one should not focus on one of the variables in the interpretation state, as will be discussed in the following section.

(continued on page 13)

"Beta" Weights Should Be Used *(continued)*

what measure to select as an index of the importance of an individual predictor depends on which of at least three meanings of "importance" you have in mind.

(1) If by X_i's importance you mean "how well X_i can predict Y if used as the only predictor," then either r_{iy} or $r_i\hat{Y}$ is the appropriate index of X_i's importance in this sense of the term.

If, on the other hand, by X_i's importance you mean "how important a contribution does X_i make to the prediction of Y *within the context of the full set of* m *predictors*," there are at least two interpretations of "importance of contribution in the context of all the predictors":

(2) You might mean "how much of a difference in subject a's predicted score on Y does his or her score on X_i make?" In this case, X_i's z-score regression weight (b_{zi}) is the appropriate index. First, a predictor whose b_z is close to zero clearly has very little to do with prediction of Y from the full equation, since even very large differences in scores on X_i will have very little impact on subjects' predicted scores on Y. Second, and more precisely, if we could find a pair of subjects whose scores on all predictors *except* X_i were identical, but who differed by one standard-deviation unit in their scores on X_i, the resultant difference in these two subjects' predicted scores on z_y would be exactly b_{zi} is a measure of the rate of change in $\hat{z}_y$ per standard-deviation-unit change in X_i, all other predictors held constant.

(3) Or you might mean "how much loss in predictability of Y would dropping X_i from the regression equation cost us?" It is readily shown (Harris, 1985, derivation C2.6) that the drop in R^2 when X_i (and only X_i) is dropped from the regression equals $b^2_{zi}(1 - R^2_{i.oth})$, where $R^2_{i.oth}$ is the squared multiple R between X_i and the remaining m-1 predictors. Thus if each of the predictors shares about the same proportion of its variance with the other predictors (has the same "communality"), the square or absolute value of b_{zi} will rank order the predictors correctly in terms of how much dropping that predictor from the equation would lower R^2. If, on the other hand, there are substantial differences among the predictors in $R^2_{i.oth}$, a better index is the F or t for the statistical significance of b_i, since this F equals (drop in R^2)/MS_{res}, where $MS_{res} = (1 - R^2)/(N - m - 1)$ is a constant independent of which predictor we're looking at. (These Fs or ts for statistical significance of individual regression coefficients are routinely provided by MRA computer programs.)

It is unfortunately quite common for the measure of "importance" selected by a given researcher to match the sense in which "importance" is meant rather poorly. Thus, for instance, one still sees articles in which an author uses b^2_{zi}s to select the best single predictor of Y (for which r^2_{iy} or the equivalent though more complex r^2_{iy} is the correct criterion), or in which the importance of X_i's contribution *to the regression equation* is purportedly measured by the loading of that predictor on $\hat{Y}$ (which is simply a constant times its zero-order correlation with Y and thus has nothing to do with its role in the regression equation).

(continued on page 14)

Cautions and Conditions *(continued)*

One alternative to interpreting the correlation between the predictor and the criterion, the "structure coefficients," is to interpret the beta weights, or standardized regression weights. There are three lines of thought here: (a) interpret individual weights, (b) interpret all weights simultaneously, and (c) make no interpretation.

Interpretation of Individual Weights

Some statistics books, such as Hinkle, Wiersma, and Jurs (1988), and therefore some researchers, try to identify the "most important predictor variable." As identified above, this violates the multivariate stance they initially took. Furthermore, the weight (and therefore "importance") will fluctuate depending upon what other variables are in the model.

Finally, if these variables were not manipulated, then one cannot make any causative conclusions about the "importance" of a variable. In the case 3 example, Gender cannot be manipulated. Although Gender has a weight of 3, those who would plan to manipulate Gender should not expect a 3-unit change on the criterion! Those who would manipulate Math Anxiety may find (a) no change on the criterion because of resistance to change, (b) less than expected change on the criterion due to unexpected side effects, or (c) more change on the criterion because of a sudden aha experiences. Obviously there are a myriad of possibilities. You just don't know what the effect will be on the criterion until you manipulate!

Interpretation of all Weights Simultaneously

Harris (1992) presents some interesting examples and somewhat convincing arguments for interpreting all beta weights simultaneously. There are, though, several weaknesses in his examples and conclusions:

1. all the examples are with $R^2 = 1.00$, but the logic is not applicable with an R^2 less than 1.00.
2. None of the examples are with results that have been replicated, though the examples with physical measurements may be assumed to be replicable.
3. The interpretation is descriptive, and while he doesn't imply causality, neither does he caution against causal interpretations.

Make No Interpretations

McNeil (1991, 1992) has argued for making no interpretation of beta weights until the following conditions are met. First, the R^2 should be very close to 1.00. Second, the results (including magnitude of beta weights) should have been replicated. Third, manipulation of manipulatable variables should have occurred.

Summary

In order for a causal interpretation to be made, the predictor variables must be experimentally manipulated. Without manipu-

(continued on page 14)

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"Beta" Weights Should Be Used *(continued)*

Refrain

To repeat: *of course* one should interpret "beta" weights. They are the appropriate basis for coming up with an interpretation of the regression variate, and if you're not interested in the regression variate (i.e., in the optimal combination of the predictors) you shouldn't be conducting an MRA in the first place. (If you're interested only in how well each predictor performs along, just compute the r_{yi}s and test their statistical significance against a Bonferroni-adjusted critical value.) The b_is also provide the best index of importance of contribution to the regression equation, when by this is meant how much impact differences in scores on X_i have on predicted scores on Y, and they are one of the two components (the other being what proportion of X_i's variance is shared with the other predictors) in the most appropriate index of importance of contribution to the regression equation, when by this is meant how much it would cost us (in terms of a decrease in R^2) to drop X_i from the equation.

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Notes

1. There is a strong convention in statistics that Greek letters are used to represent population parameters, rather than sample statistics. This conflicts with the convention that has developed among computer programmers—presumably because of the difficulty of printing subscripts—of labeling columns of z-score regression coefficients as BETAs. I and many other users of regression analysis prefer not to risk misleading readers into thinking of b_is as known population values.

2. As is well known (e.g., Harris, section 3.6), two-group discriminant analysis and MRA are logically and algebraically equivalent, with the raw-score discriminant-function coefficients from a discriminant analysis equaling the raw-score regression coefficients for predicting a dichotomous group-membership variable from scores on the dependent variables and with the F for the statistical significance of Hotelling's T^2 being identical to the F for

(continued next column)

Cautions and Conditions *(continued)*

lation, we will never know how subjects will react. While prediction is important, once we have that predictive capacity, we want to use the model to "upset the prediction," to "control" our subjects. We don't want to be satisfied, say in case 3, with predicting that John Smith will score low on Math Achievement. Knowing that, and feeling certain in that prediction, we should attempt to upset that prediction, such that John Smith obtains higher Math Achievement than predicted. But upsetting the prediction means pushing the right buttons with the right amount of pressure for the right amount of time, ideas that are unfortunately a long way down the behavioral sciences pathway. Making incorrect causal interpretations and pushing buttons prematurely only serves to obfuscate the picture. We need researchers with R^2 of 1.00 in one back pocket, and stable weights in the other, with the inclination and patience to manipulate those variables such that the field can have some overdue revelations.

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"Beta" Weights Should Be Used *(continued)*

the statistical significance of R^2 from the dichotomous-outcome-variable MRA. All the points made here about the interpretation of b_is in MRA thus generalize straightforwardly to the interpretation of z-score discriminant-function coefficients in two-group discriminant analysis. And the conclusion of the present paper that b_is are *the* criteria for interpreting one's regression variate is a special case of the more general argument (Harris, 1985, section 5.4.3; examples 6.4, 6.5; section 7.6) that interpretation of an emergent variable (regression variate, discriminant function, canonical variate, or factor) should be on the basis of the weights used to compute or estimate scores on that emergent variable, rather than on the basis of the zero-order correlations between the emergent variable and single original variables.

MWERA Communication & Update

1992 Annual Meeting Shows Growth

As a reflection of the past successful conferences and MWERA's growing membership, the 1992 annual meeting of the Mid-Western Educational Research Association demonstrated increases in almost every area. The 1992 Program contained 77 sessions, a 17 percent increase over 1991. There wree 233 presentations (a 20 percent increase) and 533 participants (a 37 percent increase). The growth was very broad, involving most divisions. As was true in 1991, the most sessions, most presentations, and the most participants were scheduled by Division K, Teacher Education. The conference featured a Wednesday evening presentation and keynote address (included in this issue) by Thomas Good, University of Missouri-Columbia. The President's Address (included in this issue) and Division Meetings were reinstituted in 1992 after a one-year absence. A report from the Member-at-Large will appear in the next issue of the *Mid-Western Educational Researcher.*

(information taken from Richard Pugh's VP Report)

New Editorial Board Members Appointed

The Editors wish to express their tanks to Laura L. B. Barnes, Oklahoma State University; Robert L. Brennan, American College Testing Program; Ayers G. D'Costa, Ohio State University; Judson A. Harmon, Wisconsin Department of Public Instruction; and Jay R. Price, University of Wisconsin-Stevens Point for their service on the Editorial Board of the *Mid-Western Educational Researcher.* Their time in reviewing manuscripts, efforts in providing direction, and professional status that they contributed to the publication was greatly appreciated. Replacing Ayres D'Costa will be Immediate Past President Barbara Plake. New Editorial Board members include Carolyn Benz and Mary Sudzina, University of Dayton, and Orpha Duell, Wichita State University.

Two New Publications from ERIC

In Our Own Words: Community Story Traditions to Prevent and Heal Substance Abuse by Michael Tierney and *Managing Smallness: Promising Fiscal Practices for Rural School District Administrators* by Deborah Inman Freitas have recently been published by the ERIC Clearinghouse on Rural Education and Small Schools. They are available for $10 each from ERIC/CRESS, P.O. Box 1348, Charleston, WV 25325.

Two More Ways to Be Involved at AERA

A special interactive session, "Perspectives on Scholarship in Teacher Education," is going to be held at the AERA annual meeting to be in Atlanta. Research on faculty roles defined by policy statements, and expressed by education students, faculty, deans, and the general public will be presented. A summary of each study will be sent by U.S. mail or e-mail before the conference. It is hoped that those attending will have read the summaries and will be able to actively participate by providing their perspective and/or the policies and procedures of their institution.

As part of a research study, "Home Schoolers On-Line," to be presented at AERA, your questions are being solicited. Please send one to three questions that you have for home schooling parents. The questions will be posted on a computer bulletin board used extensively by home schooling parents. The responses will be reported at AERA.

To participate in either of the above projects please contact Greg Marchant, Educational Psychology, Ball State University, Muncie, IN 47306 or e-mail 00GJMARCHANT@BSUVAX1.

Letters to the "Researcher"

I am writing to express my disappointment in the presentation made by the luncheon speaker at the 1992 MWERA annual meeting. I want to begin by saying that I am in no way being critical of Richard Pugh who arranged to have the speaker. It is my understanding that he identified the luncheon speaker based on advice by several MWERA members who strongly recommended the presenter.

I also want to say that I fully recognize that finding a good luncheon speaker (and delivering a luncheon address) is not an easy task. There is the tension between entertaining the audience, on the one hand, and making a meaningful contribution to the conference on the other...all of this over clanking forks and hushed conversations.

However, it is exactly on the above two criteria (entertaining the audience and making a meaningful contribution to the conference) that I found the 1992 luncheon speaker unacceptable. First, with regard to entertainment value, there were parts of the presentation that were quite humorous. I especially liked the times when he made me laugh at myself or gave me suggestions (perhaps not useful, but entertaining nonetheless) on ways to handle unpleasant people (like hanging up in the phone conversation when I am doing the talking). There were also parts of the speech, probably intended to be humorous, that were simply offensive. He took the opportunity to make direct or indirect slurs at disadvantaged groups in a tasteless manner. I was especially offended by the dichotomy of "Bright" people and "Poor" people; as if to infer that bright people are rich and less intelligent people

(continued on page 16)

Letters to the Editor (continued)

are poor. Another point that was extremely offensive to me was the comment about foreign students; both his self-admitted inability to distinguish among them and therefore using a degrading numbering system and his statement about sending foreign students to work with colleagues as revenge. Therefore, I feel that the presentation was too offensive to be entertaining.

The second evaluative criterion, the one of meaningful contribution, was also not met. I could see no thoughtful organization to the presentation; it was merely joke-telling and meanderings. If there was a scholarly message in the content of the presentation, I missed it!

MWERA is a wonderful, supportive organization that purports to support educational professionals. The conference had many strong components. However, I believe that the organization has the right to expect more from its featured speakers. We missed the opportunity to grow through scholarly input. More importantly, under the auspices of MWERA, the speaker made rude and inappropriate comments that were offensive to many of our members.

I am seriously disappointed that the organization sponsored a presentation that was offensive and provided no substantial contribution to the conference. I hope the people who felt offended will understand that the actions and behaviors of the presenter were not representative of the concerns and philosophy of the organization.

Barbara S. Plake, Ph.D.
Immediate Past President

The annual meeting of the Mid-Western Educational Research Association almost always includes presentations by invited speakers. The Fourteenth Annual Meeting held October 14-17, 1992, was no exception. The Program followed the usual pattern and scheduled invited speakers for an Invited Address on Wednesday evening, a Keynote Address on Thursday morning, and a Luncheon Address on Friday.

Because of reactions from many of those in attendance at the Luncheon Address on Friday, the Executive Committee wishes to respond to the expressions of dismay from some of those in attendance. The views and opinions expressed by the speaker during the Luncheon Address offended a substantial number of individuals present, including members of the Executive Committee. Some of those in attendance stated their objections directly to the speaker following the address. The Executive Committee wishes to express its concern to the membership. The Executive Committee was displeased by the insensitivity of some of the speaker's remarks, and deeply regrets any offense provoked by the remarks.

—Richard Pugh and
the MWERA Executive Committee

In Response to the "Mid-Western Educational Researcher's" Special Multicultural Education Issue

Brant Abrahamson,
Riverside-Brookfield High School

Thank you for the Spring 1992 issue of the *Mid-Western Educational Researcher*. I have been trying to keep up with various multicultural arguments and positions. In this material I found the views of Asa Hilliard to be the most interesting. Most of my comments relate to his interview with some notes on other authors.

Hilliard says that peoples' way of acting "does not have anything to do with biology," but it seems to me that the thrust of his argument is to equate or grossly overlap the two. Why else would he use the term "race," which has overwhelming biological connotations?

Sure, students differ in learning styles, and to a degree a particular style can be sociologically correlated with such factors as skin color, gender, language, ethnic background, left-handedness, regionalism, aptitude, family solidarity and probably many other student categories. These differences tell me that as a teacher I should strive to use a variety of teaching methods to accommodate as many learning styles as possible. However, I do not believe that it is helpful to try to pigeonhole students so that each tiny group can be taught in a way that adheres to some social scientist's statistical correlations. This is guilt by association, and these classes may even accentuate the differences that they were designed to counteract.

Given the recent data on the reduced life-spans of left-handers, I could make a strong argument that the right-handed people have victimized me because I am left-handed. I can further argue that a special class for left-handers should be established—a class that focuses upon the learning difficulties of the 10 to 20 percent of our students who are left-handed. In addition, I could probably argue that I am uniquely qualified to teach such a class because I am left-handed and know from "authentic" experience what it's like to be a lefthander in a right-handed world.

Are such lines of reasoning helpful? Educators probably should, at times, select out for special attention students who have extreme physical or learning difficulties—or exceptional talents. But, one must be very careful even with this kind of pigeonholing. It is very easy to get to process reversed. I could, for instance notice a student's left-handedness and assume, therefore, that he or she is dyslexic, a relatively common problem of left-handers. Similarly it is very easy for so-called "gifted and talented" programs to be abused. My general impression is that methodologies touted as appropriate for gifted children are desirable for most children if they could be in classes as small as those typically associated with giftedness.

If Hilliard's ideas on the distinctive Afro-American learning styles are interpreted to mean that separate curricula or classrooms or should be established, I disagree for the reasons mentioned earlier. Separation will increase the differences that exist in our society, and our problems as a nation will multiply. I don't agree with Hilliard's statement that the problem revolves around "some liberal types [who] refuse to acknowledge differences."

In Response to "MWER" *(continued)*

I have no basic objections to his answer to the question, "How can schools become more democratic?" (p. 24) unless he is arguing that it is the duty of the schools to *preserve* students particular ethnic identities. Educators should not impose upon students some "duty" to maintain their separatist ethnic roots. If they wish to do so, fine. When relevant, classroom projects should allow them to plug into their traditions as with other aspects of their lives outside of the classroom. If they want to disregard their ethnicity and identify with the larger American society, that option should also be available to them.

In educational research I think that it is a good idea to include a researcher from the group being studied, as Hilliard suggested. A large scale study on left-handedness would benefit from having the individual perspectives of a left-handed social scientist when discussing formative aspects of the research design. I consider this to be an important guideline, but only one among many others. James Boyer in his article makes the same point, but I am very troubled by his suggestion that no research is "authentic" unless a member of the studied group is on the research team (p. 7 and 8). He has restricted the term "authentic research" to those studies where target group people are also the researchers. This use of the word, "authentic" is non-standard, propagandistic and results in confusion. No animal research can be "authentic." According to Boyer, none of the R-B school committees are doing "authentic research" because students are not fundamentally involved in the committee organization or decision-making.

From a practical standpoint I think that focus group involvement in research designs is very desirable. I think that students should be involved in R-B's committees. When I worked with the Earthwatch folks on Aboriginal rock art in northern Australia, the Wardaman people participated in organizing the research. If any one of them said, "No!" that was it. Overall I think that the research was improved as a result. Although more time-consuming and expensive, the Wardaman became research allies, not opponents. They contributed their oral understandings of the shelter art that we were studying, and our leaders learned much that would not have become known otherwise.

Nonetheless, I hope we do not get to the point where social scientific investigators think that research should be categorized in some fundamental way as "authentic" or "basic" depending upon researchers' various ascribed groupings. This deconstructionist viewpoint is extremely dangerous in my view, and I reject it.

My comments and criticisms of the other articles come from the same perspectives. African-American male academies make me very nervous. I do not share Midgette's enthusiasm. The advantages that he claims for such schools can be found in any well-managed school. I see no reason to believe that these sex and race segregated schools will be intrinsically superior in the long run—after the euphoria of newness has evaporated. I believe that the bulk of the research over the years has pointed in an opposite direction. Have we already forgotten about Brown vs. the Board of Education of Topeka, Kansas, data?

"Does Direct Experience Change Education Students' Perceptions of Low-Income Minority Students?" Haberman and Post's findings are not so revolutionary, but their reactions to their findings are quite interesting.

> The major finding of this study supports the remarkable phenomenon of students generally using their direct experiences to selectively perceive and reinforce their initial preconceptions. Students who expected to find problems did so. Those who thought they could practice instructional methods did so. Those who though there would be discipline problems found them. (p. 30)

A "remarkable phenomenon"? Selective perception is a durable and standard sociological concept that we use frequently in class. Their research does however, point up the difficulties of permanently changing student out-group attitudes. Apparently even problems which include extended cultural interaction have only limited effects.

I believe schools need to use both intellectual and affective approaches to prejudice reduction. Documented interview or paper/pencil attitudinal change probably will not be very durable unless school efforts are supported and reinforced by media producers and many parents as well as local and national leaders. As long as cultural opinion formulators play their various "race cards," I am not confident that we will become much more united as a society regardless of what is done in the schools.

New Direction in Research References

(continued from page 10)

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(continued on inside back cover)

Reflections on "The Unschooled Mind": An Interview with Howard Gardner

Jacqueline Anglin, Berry College

Q **In your most recent book *The Unschooled Mind*, you have been credited for "untangling the mysteries of learning and the current state of cognitive research." From your point of view, what is the current state of cognitive research?**

A Of course, cognitive research is a gigantic topic. I'm interested in children's cognition and students' cognition. What I particularly focused on in the book was a surprising discovery made over the past 20 years.

In school students are often considered to have a good understanding of the material if they can perform well on tests. And yet when you actually remove those same students from the testing room context, you can see whether they have truly mastered concepts, skills, and facts and so on. If you can place students in a situation where those concepts, facts, and skills are relevant, students typically fail to draw on their knowledge. Even our best students in the best schools don't get it. For instance, they don't know how to use Newton's laws to explain what happens when you're throwing a frisbee; they just haven't been able to make a connection. So even though you give the students degrees and call them educated, the research shows that most people do not think about the physical world, the social world, and their own world very differently from the way that they did when they were five years of age.

My book is called *The Unschooled Mind* because I'm trying to describe what the five-year-old mind is like. Most of us walk around thinking like five-year-olds, except in areas where we're experts. Usually individuals are only experts in one or two areas, areas where they've worked for about 10 years. When you're an expert, you really do think differently about the world. Most of us in education are expert readers, in the sense that we read very quickly. We forget what it was like to sound things out or deduce meanings from illustrations. But most of us are not experts in understanding the physical world, the biological world or the psychological world. Yet if we go to school, we may think we are experts until somebody comes around and shows that we can't really use that knowledge.

Howard Gardner is a professor of education and co-director of Project Zero at the Harvard Graduate School of Education, a research psychologist at the Boston Veterans Administration Medical Center and an adjunct professor of neurology at the Boston University School of Medicine. His most recent book, "The Unschooled Mind" was the focus of this interview.

Q **The research teams that you direct at Project Zero are interdisciplinary and focus on alternative assessments. What research methodologies have served Project Zero particularly well?**

A Project Zero has been in existence for about 25 years. Over the course of that time we have used most of the traditional research methodologies. There have been hundreds of experiments with control groups, statistical analyses, and that kind of thing. We've done many case studies of individuals, classes, teachers, and curricula. We've done a lot of observational and descriptive research where we work with students. For example, we observe what it's like when they're learning a new kind of curriculum. We try to figure out what's going on and create appropriate scoring systems, and the like.

So I would say that we're committed to being eclectic. There is a perennial tension in the educational research world between quantitative and qualitative research. We take the position that the problems should dictate what sorts of methods you use rather than simply embracing one kind of method or another.

Quality research can use a variety of methods. If you're trying to test a hypothesis, usually descriptive or qualitative methods are not very successful. On the other hand, if you are trying to understand what it's like to learn about something new, the experimental method is usually pretty impoverished. At present, a lot of the work that we're doing really involves action research. We go in as researchers with our own conceptions and expectations, but we're not simply observing teachers and students, we're actually involved in formulating the lessons and bringing out the criteria that will be used for assessment. Sometimes, even in co-teaching, we are coaching the teachers.

When you get involved in action research, you realize there are certain limitations on the kind of conclusions you can draw because, in a sense, you are part of the treatment. But if you are trying to conduct educational innovation, it's just impossible to give somebody a book and say "do it"; it doesn't work that way. You have to roll up your sleeves, help and coach, learn from mistakes, discuss, use feedback and so on. So you're a little bit

more like an anthropologist, actually living in the bush along with other people; you have to tolerate that degree of ambiguity or messiness in order to be able to do the studies at all.

Q **Could you elaborate on one of the projects in process at Project Zero? Perhaps Spectrum. Could you describe a trail the research has taken?**

A Spectrum is actually an interesting example in that regard. The ideas for Spectrum were developed by David Feldman and myself right after *Frames of Mind* was published in 1983. In *Frames of Mind* I argued that people have different kinds of intelligences, and that different people don't have the same profile of intelligences. So the question arose—even when kids are as young as at three, four, or five years of age, do they already have different profiles of strengths and weaknesses? If you'd asked me 10 years ago what I was going to do, I probably would have said "Develop seven tests, one for each intelligence." I was still a victim of the notion that tests are something that people take at a certain historical moment. You examine them for an hour or so and then you give them a score. But I've had increasing misgivings about that whole psychometric approach.

What ultimately happened with Spectrum was this: we created an environment, the Spectrum classroom which is sort of like a children's museum. It's very richly endowed with all sorts of materials that kids find interesting; we don't include any materials unless we know that kids like them. We watch the kids over the course of the year, both in free play and in more structured tasks that we devised. At the end of the year, we write a so-called Spectrum report. That report is a prose account of a child's particular intellectual profile at that moment in his or her life, along with some suggestions or recommendations of what ought to be done with that child if you want to build on strength as opposed to areas of weakness.

Now that's how Spectrum ought to be used in a regular classroom where the school has some interest in children but isn't really primarily oriented toward research. Any teacher who has had some exposure to thinking in terms of multiple intelligences categories, some exposure to the kids interacting with the materials that we've devised, ought to be able to get at least a rough-and-ready description. For example, one might conclude that a given child is very strong in music, and strong in certain aspects of spatial but is insensitive to interpersonal issues. I don't think any teacher should want to do more than that with a four- or five-year-old; it would not be an optimal use of time.

On the other hand, we have some quite specific research questions we're interested in. For example, how stable are children's intelligences over time? How does performance in a Spectrum environment compare to performance on an I.Q. test? For such purposes, it's important that we adopt a more structured approach. So we familiarize kids with the materials in a Spectrum classroom and then we introduce some tasks which the kids haven't seen before. That way, we can get a score which reflects the child's developmental level: Is this child a novice or journeyman or beginning to master this particular Spectrum domain? That kind of approach is necessary if you want to answer questions of a scientific nature, but it's not something that is necessary for most teachers. I think it would be burdening to have teachers administer every task with every kid and it wouldn't be necessary. On the other hand, if you want to test hypotheses, then you need to have more control over what is happening. Spectrum is now used in several other sites around the country. Sometimes it's used for research purposes. Sometimes it's used as an effective classroom approach, which one nourishes a lot of students' intelligences, and helps them to become engaged in a subject, and provides new challenges as kids master the material that they have been given.

Q **One term that you continue to use is "teacher as curriculum broker." Could you elaborate on that concept?**

A You could take the position that every person ought to be taught the same thing in the same way, and indeed school would be very easy to do if we could assume that one curriculum taught in one way, is the best for everybody. But we have a few thousand years of experience that suggests that that's not true. The conclusion you could draw is that, well, some kids are so stupid that they're not going to learn and so we'll focus on those who do learn and understand the curriculum in the same way. However, you can take the position that curricula ought to offer some choice, and even when there is a mandated curriculum, lessons don't have to be presented in the same way to each child. Everybody should learn geometry or history, I have no objection to that, but it's hardly necessary for everybody to learn geometry and history in exactly the same way.

When I talk about teachers as being curriculum brokers, I mean two things. First, that to the extent you have electives, the teacher's job ought to be to help the students locate the kinds of things that they might find interesting and be good. But even in those areas where the curriculum is mandated, the teacher's job is to be very sensitive to the learning styles, and intellectual strengths of the kids in the class. To the extent possible, the teacher should provide the materials—hardware, software, and peer interactions and the like—which would help that particular child do the best that he or she can.

Often we talk about treating kids equally by giving them all the same treatment. I think that's actually a way of treating kids very unequally. In that case you're consciously biased toward the kids who happen to find that particular treatment congenial. So we might say that kids are really treated equal, when each kid is getting the optimal chance to learn; and if the teacher isn't going to be the broker, I don't know who could be.

Q **You often speak about the reform movements as trying to make schools uniform, using one-dimensional metrics in assessment. Could you discuss current reform efforts?** *(continued on page 20)*

A As I said, it is actually easier to run a school if it's uniform. People teach the same stuff, in the same way, people wear uniforms and so on. Kids are pretty resourceful, so some of them do manage to survive in such an environment even though it's not tailor made for them. But, the notion that we can place a child with reference to every other child as if there was a single scholastic hierarchy, is a tremendous arrogance. The I.Q. test, which was developed for one purpose, ended up being the major way in which we think about school in general—the smart kids and the dummies. The smart kids are born smart; we know they should be pushed ahead as far as possible and too bad for the rest. And so you needed to have a more fine-grained analysis of intelligence. There is something like scholastic smarts and maybe it's helpful if you have that kind of smarts to do well in school. But life is a lot more complicated than school, and there's a lot of ways "to do" school.

Most of us have a notion that school has to be the way we remember it, and that's just rubbish. The school can be thousands of different ways. Since we have thousands of different kinds of kids, probably school should be done a thousand different kinds of ways.

Q **You mention that successful school reform will depend equally on assessment, curriculum, teacher education, and community support. You refer to these as the "four nodes" of school reform. Can you talk about how your work is addressing any or all of these contexts?**

A In truth, that formula is more of a sign of my own learning than it is an original discovery. Ten years ago when I got into the business of school reform, I figured that if we would just change assessment, everything else would take care of itself. But the truth is that you can have very good assessments but they're worthless if teachers don't have the curricula which demonstrates student learning. Many people say, "Oh, send us the alternative assessment kit or send us the portfolio kit" but they don't change their practices and so you end up with demonstrating no student learning at all. So assessment needs a curriculum that's good enough for it; to put it another way, if you have a good curriculum, you need to have an assessment which shows that the curriculum is working. Alas, a lot of people now embrace interesting curricula but use the same stupid old tests that don't even begin to show the kinds of things that they're supposed to show.

Even if you have good curriculum and assessment, if teachers don't like them, believe in them, buy them, embody them, or don't want to use them, again they're worth very little. There are many interesting curricula and assessment materials developed in the sixties which are not used today because teachers never bought into them. I think that's partly the teachers' fault, but it's also partly the fault of the makers of these materials who didn't think enough about where the teachers buy into the stuff and want to use it, the community may not want it. The community may want everything done with the Abracadabra Test of Basic Skills or the SAT or with a monotone curriculum, based on a monotone textbook. In such a case, the best motives on the part of the school folks aren't going to amount to anything. I don't spend my time trying to educate the community, but somebody needs to do this. Alas, the tone of political rhetoric about education in this country is an embarrassment.

Q **What questions would you have like me to ask?**

A As researchers, we're developing lots of new ideas about curriculum, assessment, and about research methodology. People who are involved in teacher education and educational research, I believe, have an obligation to apply these ideas to ourselves. We shouldn't just think of *other* folks as the problem or as the enemy. We have to look at our own teaching. Are we teaching effectively? Can we demonstrate what our students are learning? Are we making use of research findings? Are our curricula as good as they can be? Are they as up-to-date as they can be? Are our assessments worthy of what we're telling other people to do? I'm sure I'm not alone in saying that many of us have not been physicians healing ourselves. We instead assume everything is fine with us, that problems lie elsewhere. And so, I would encourage people interested seriously in reform to look at their own practice, at the findings of their own research, and at their own training of future teachers. Those of us who train teachers are in a very powerful position because we model what we think good teaching is. If we do nothing but lecture and give short answer tests, we can hardly expect our students to go out and to become innovative teachers. That's a big job, it reminds us that it's not easy to change the rest of American education either.

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Teacher Assessment Literacy: Teachers' Competencies in the Educational Assessment of Students

By Barbara S. Plake, University of Nebraska-Lincoln

Abstract

It has been estimated that teachers are involved in assessment-related activities up to 50 percent of the time. However, teacher training programs frequently do not contain specific training in educational assessment or testing. In order to identify assessment competencies for development of training materials in educational assessment for inservice teachers, a national survey was undertaken to measure teacher knowledge in assessment and testing. The instrument was designed to assess the competencies identified in 1990 by a joint committee of the National Educational Association, the American Federation of Teachers, and the National Council on Measurement in Education, *Standards for Teacher Competence in the Educational Assessment of Students*. Of the seven competency areas articulated in these *Standards*, teachers showed their best performance in the area of "administering, scoring and interpreting test results" and poorest performance in "communicating test results." Based on the survey results, a joint committee of NEA, AFT, and NCME is planning the development of a training prototype for delivering inservice programs to increase teacher competency in educational assessment.

Stiggins (1991) estimates that some teachers spend up to 50 percent of their time in assessment-related activities. These activities include formal classroom assessments, such as quizzes and unit tests, informal classroom assessments involving daily observations of student achievement and behaviors, plus district and state standardized assessments. Just as the types of assessments teachers use are varied, so also are the purposes of these assessments. For example, student assessment data are relevant for purposes such as:

1. aiding in curriculum/instructional planning,
2. providing individual diagnostic instructional programs,
3. determining individual status on specific instructional objectives,
4. ascertaining whether class goals for instruction have been achieved,
5. evaluating comprehensive student achievement for end-of-unit grades,
6. providing necessary outcome data for federal programs, such as Chapter 1, and
7. informing decisions at the administrative level on student grouping or program implementation.

Teachers report that they are ill-prepared in the area of student assessment (Schafer & Lissitz, 1987). Wise, Lukin and Roos (1990) reported that about half of the teachers they surveyed felt their measurement training was inadequate. One reason for this lack of confidence by teachers about their competencies in assessment is that teacher preservice training programs often provide only limited exposure to coursework or experiences in testing and educational measurement. O'Sullivan and Chalnick (1991) found in their survey of state departments of education that few states require coursework in measurement or testing for initial certification; Hills (1991) reported that only four states have a legal requirement for an assessment course for prospective teachers. This is not a new problem. National surveys of training program requirements as early as 1955 (Noll, 1955) have documented that teacher preparatory programs did not contain sufficient coursework in educational measurement. In fact, recent surveys (Schafer & Lissitz, 1987) indicate little change in the proportion of teacher education programs requiring an assessment course.

The National Council on Measurement in Education (NCME), the National Education Association (NEA), and the American Federation of Teachers (AFT) have been working together to address the problem of inadequate assessment training for teachers. The goals of this collaboration are:

1. to articulate the assessment competency needs for teachers in the area of student assessment; and
2. to develop training materials for use in helping teachers become proficient in these assessment competency areas.

The purpose of this article is to describe the activities of these three organizations in meeting the goals of improving the assessment literacy levels of teachers.

Goal 1:

Articulation of the Assessment Competency Needs for Teachers in the Area of Student Assessment

Through a collaborative effort with the American Association of Colleges for Teachers in Education, AFT, NCME, and NEA published the *Standards for Teacher Competence in the Educational Assessment of Students* in 1990. The *Standards* were developed through a study of teacher assessment practices. A copy of the *Standards* has been edited and is the Appendix.

The *Standards* address seven broad skill areas in educational assessment. These skill areas are:

(continued on page 22)

1. choosing assessment methods appropriate for instructional decisions;
2. developing assessment methods appropriate for instructional decisions;
3. administering, scoring and interpreting the results of both externally produced and teacher-produced assessment methods;
4. using assessment results when making decisions about individual students, planning teaching, developing curriculum, and improving schools;
5. developing valid pupil grading procedures;
6. communicating assessment results to students, parents, other lay audiences, and other educators; and
7. recognizing unethical, illegal, and other inappropriate methods and uses of assessment information.

Goal Two:

Developing Training Materials for Use in Helping Teachers Become Proficient in the Assessment Competency Areas

Subsequent to the publication of the *Standards for Teacher Competence in the Educational Assessment of Students*, NCME embarked on a Kellogg Foundation funded project to work with representatives from NEA and AFT to develop training materials for teachers to help them become competent in the competency areas articulated in the *Standards*. In order to make informed decisions about the development of training materials, the first task of the project was to conduct a national survey of teachers to ascertain their current levels of proficiency in the competencies addressed in the *Standards*. Next, the project staff was to use this information in targeting a competency area for the development of a training prototype. Finally, a training module was to be designed for delivery through existing training networks under the auspices of NEA and AFT.

Current Level of Teacher Competencies in the Educational Assessment of Students.

A national survey of teachers to determine their levels of achievement in the competency areas identified in the *Standards* was undertaken in fall 1991. This project entailed developing an instrument that used the *Standards for Teacher Competence in the Educational Assessment of Students* as the test blueprint, obtaining a nationally representative sample of teachers to take the test, and analyzing their responses to ascertain their achievement status in the area of educational assessment of students.

Instrument Development

In order to determine the level of proficiency of teachers in the competency areas addressed in the *Standards*, first a test needed to be developed that measured the seven broad skill areas. The final instrument consisted of two parts: Part One was designed to measure the seven competency areas while Part Two asked questions about teachers' perception of test utility, their confidence in test interpretation, their previous access to measurement training, their preference for training delivery options, and descriptive information about their careers in educational settings.

Part One consisted of a 35-item multiple choice instrument; five items designed to assess each of the seven competency areas. One goal of item development was to prepare application questions that were realistic and meaningful to teachers' assessment practices. Members of NCME were asked to serve on a content validity review panel and their responses gave confirming evidence that the items in the instrument matched well the competency standard area they were designed to assess. In addition a pilot study was achieved on a draft version of the instrument. Further, practicing teachers and administrators were asked to review the test items and give feedback on the appropriateness of the items for classroom teachers' measurement practices.

Sample

Once the test was deemed to be in final form, the instrument was sent to a national sample of teachers. This sample of teachers was identified by first selecting six districts per state. Then the state's assessment director was asked to verify the existence of the selected districts and to provide a contact person (testing coordinator or equivalent) within each district. Four of these districts formed the primary sample; the remaining two were identified for use in case one of the districts in the primary sample did not respond or were unable to participate. The testing coordinator (or equivalent) within each of these districts was contacted and asked to cooperate by identifying teachers for the national study. The testing coordinators were informed about the purpose, importance of the study, and that their state assessment director had endorsed the project. If the testing coordinator in the district agreed to participate, he or she was sent a packed of materials to distribute randomly to 18 teachers within the district (6 at elementary, 6 at middle/junior high, and 6 at high school levels). All states but 5 were able to participate; a total of 98 districts in 45 states made up the final sample.

Administration

The instrument was mailed to the testing coordinators in the fall 1991. A total of 555 (48 percent) of the teachers returned their instruments came in from a widespread representation of the United States and contained large and small school districts in rural, suburban and urban geographic regions. Figure 1 on page 23 shows the representation of the sample.

Results

Outcomes from the two parts of the instrument will be presented separately. First, the results from Part One (achievement of the competency areas) will be shown. Next, Part 2 (teacher perceptions and background) will be documented. Finally, some cross-breaks showing results on the achievement test as a function of teacher perceptions and background will be considered.

Figure 1

Return Rates by State

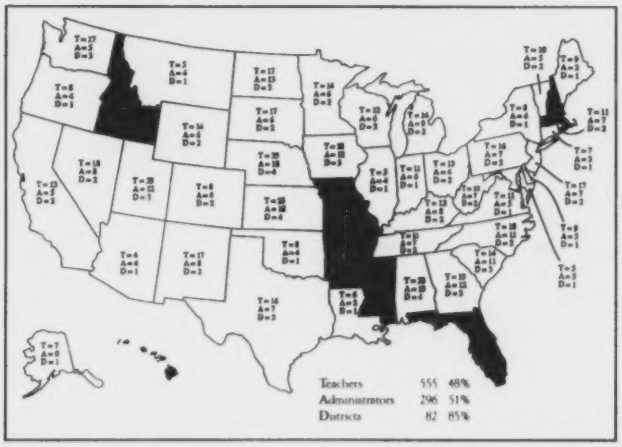

Table 1

Test Performance by Teachers on the Competence Standards Instrument

Scores	$\bar{X}$	*SD*
Total Score	23.20	3.33
Subscales		
Choosing	3.46	0.93
Developing	3.22	0.80
Administering	3.96	0.90
Instruction	3.40	1.11
Grading	3.19	0.78
Communicating	2.70	1.21
Ethics	3.26	0.78

Note: $N = 555$

Part One: Teacher achievement on the competency areas. Overall test results are shown in Table 1. On average, teachers answered slightly over 23 of the total 35 items correctly. Out of the seven competency areas, the highest overall performance for teachers was found in the competency area "Administering, Scoring and Interpreting Test Results" (Mean = 3.96; maximum possible score = 5). Teachers showed their lowest achievement in the competency area "Communicating Test Results"; average score for the teachers in this competency area was 2.70 out of the possible five items.

On 10 of the 35 items, 90 percent or more of the teachers answered the item correctly. These items document areas of demonstrated strength for the teachers. Two of these items address issues in making assessment selection decisions: one asks for a decision regarding the most important consideration in choosing a method for assessing student achievement and another focuses on the choice of an assessment strategy for the purpose of measuring student understanding of an instructional unit in problem solving. Other strength areas are found in teacher knowledge of acceptable test taking behavior for timed test administration of a standardized test; explanation of the basis for a child's grade to a parent, and recognition of unethical practices in standardized test administration.

On the other hand, there were a few items that were very difficult for the teachers. On five items less than 30 percent of the teachers answered correctly. Two of these items came from the "using assessments in grading" standard. One item asked teachers to choose a reliable source of student performance information and another focused on assigning equal weights to components of a grade. Another difficult item focused on steps likely to increase reliability of test score; only 13 percent of the teachers answered this item correctly. Most of the teachers chose an option that might arguably enhance the test's validity (adding on essay component), but not likely the choice for augmenting reliability (increasing test length). Two other items with less then 30 percent of the teachers answering correctly were from the "recognizing unethical practices standard." One focused on knowledge of truth in testing legislation and the other on recognizing unethical test administration practices.

Part Two: Teacher perceptions and background. The majority of teachers in the study had between 6 and 12 years of teaching experience. Relatively few teachers in the sample had less than five years of experience or more than 15. The teachers were far more positive about the utility of teacher made tests for instructional decisions (over 85 percent were supportive of this use) than they were about the utility of standardized tests for the same purpose (only 34 percent were positive about using standardized tests in this way). Further, over half of the teachers in the sample were less than comfortable with their ability to interpret standardized test results.

Over 70 percent of the teachers in the study reported prior exposure to tests and measurement content, either through a course or other training opportunity (such as inservice). However, that training was quite dated for the majority of the teachers in the survey as most of the teachers (54 percent) reported it had been more than six years since their exposure to measurement training. When asked how they would prefer to receive additional training in assessment, the overwhelming majority (85 percent) were supportive of an inservice mode of delivery.

Achievement performance by teacher perceptions and attitudes. Teachers who reported they were uncomfortable with interpreting standardized test results did in fact score significantly lower on the achievement test than did teachers who reported feeling comfortable with such interpretations. However, the actual average score difference between these two groups was quite small (Mean for those indicating comfort in interpreting standardized test results was 23.91; mean for teacher stating they were uncomfortable was 22.34). Likewise, even though the teachers who had

(continued on page 24)

previous coursework/training in measurement scored significantly higher on the achievement test than those who had not, the difference in overall performance for the two groups was less than one point (Mean for those who had a course was 23.41; mean for those who did not have the a course was 22.72). Therefore, while some score differences were noted in achievement test performance, these did not appear to be important for decisions regarding teacher assessment training.

Development of Training Materials

Based on the results of the national survey of teacher proficiencies in the competency areas addressed in the *Standards for Teacher Competence in the Educational Assessment of Students*, and on other relevant information, it was decided that the content area "Communicating and Interpreting Test Results" be selected as the one to design the initial training program.

The training materials will be standardized across assessment topics. The basic structure will be to present teachers with a context in which an assessment issue is relevant. For that assessment issue within a particular situation, a training module will be developed so that the teachers:

1. are provided with knowledge of the assessment concept;
2. see an illustration of the concept in a variety of settings;
3. are presented with a description of the utility of the concept in a variety of settings with a focus on implications of the concept to different contexts; and
4. are shown how the concept might be communicated in a variety of settings and contexts.

The training modules will consist of several two-hour components designed to be used in a two-day workshop for inservice teachers; however, individual components can be selected for use. This will allow for individualization and specialization of the materials for different purposes and audiences.

Summary and Conclusions

Assessment competencies are critical to the teaching profession. Teachers use assessment information, either formally or informally to make instructional and evaluative decisions about their students. These activities occupy a dominant proportion of their professional activity.

Teachers are not adequately prepared to function at a professional level in educational assessment. They do not receive sufficient training in their preservice programs and they report feeling uncomfortable making assessment-related decisions.

Through the specification of competency standards for teachers in the educational assessment of students, NCME, NEA and AFT have made a clear statement about the skills teachers should be expected to have in order to be considered proficient in this critical area of their professional practice. Further, through the use of a test designed to measure teachers' levels of competency in these assessment standards, competency areas in greater need of skill remediation have been identified. Using this information, a plan is in place to develop a prototype for inservice training programs designed to enable teachers to achieve necessary competency levels in student assessment.

Presidential Address presented at the 1992 annual meeting of the Mid-Western Educational Research Association, Chicago, IL.

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Appendix A

STANDARDS

Standards for Teacher Competence in Educational Assessment of Students

Developed by the American Federation of Teachers, National Council on Measurement in Education, National Education Association

The professional education associations began working in 1987 to develop standards for teacher competence in student assessment out of concern that the potential educational benefits of student assessments be fully realized. The Committee* appointed to this project completed its work in 1990, following reviews of earlier drafts by members of the measurement, teaching, and teacher preparation and certification communities. Parallel committees of affected associations are encouraged to develop similar statements of qualifications for school administrators, counselors, testing directors, supervisors, and other educators in the near future. These statements are intended to guide the preservice and inservice preparation of educators, the accreditation of preparation programs, and the future certification of all educators.

A standard is defined here as a principle generally accepted by the professional associations responsible for this document. Assessment is defined as the process of obtaining information that is used to make educational decisions about students, to give feedback to the student about his or her progress, strengths, and weaknesses, to judge instructional effectiveness and curricular adequacy, and to inform policy. The various assessment techniques include, but are not limited to, formal and informal observation, qualitative analysis of pupil performance and products, paper-and-pencil tests, oral questioning, and analysis of student records. The assessment competencies included here are the knowledge and skills critical to a teacher's role as educator. It is understood that there are many competencies beyond assessment competencies which teachers must possess.

By establishing standards for teacher competence in student assessment, the associations subscribe to the view that student assessment is an essential part of teaching and that good teaching cannot exist without good student assessment. Training to develop the competencies covered in the standards should be an integral part of preservice preparation. Further, such assessment training should be widely available to practicing teachers through staff development programs at the district and building levels.

The standards are intended for use as: a guide for teacher educators as they design and approve programs for teacher preparation; a self-assessment guide for teachers in identifying their needs for professional development in student assessment; a guide for workshop instructors as they design professional development experiences for in-service teachers; and an impetus for educational measurement specialists and teacher trainers to conceptualize student assessment and teacher training in student assessment more broadly than has been the case in the past. The standards should be incorporated into future teacher training and certification programs. Teachers who have not had the preparation these standards imply should have the opportunity and support to develop these competencies before the standards enter into the evaluation of these teachers.

The Approach Used to Develop the Standards

The members of the associations that supported this work are professional educators involved in teaching, teacher education, and student assessment. Members of these associations are concerned about the inadequacy with which teachers are prepared for assessing the educational progress of their students, and thus sought to address this concern effectively. A committee named by the associations first met in September 1987 and affirmed its commitment to defining standards for teacher preparation in student assessment. The committee then undertook a review of the research literature to identify needs in student assessment, current levels of teacher training in student assessment, areas of teacher activities requiring competence in using assessments, and current levels of teacher competence in student assessment.

The members of the committee used their collective experience and expertise to formulate and then revise statements of important assessment competencies. Drafts of these competencies went through several revisions by the Committee before the standards were released for public review. Comments by reviewers from each of the associations were then used to prepare a final statement.

The Scope of a Teacher's Professional Role and Responsibilities for Student Assessment

There are seven standards in this document. In recognizing the critical need to revitalize classroom assessment, some standards focus on classroom-based competencies. Because of teacher's growing roles in education and policy decisions beyond the classroom, other standards address assessment competencies underlying teacher participation in decisions related to assessment at the school, district, state, and national levels.

The scope of a teacher's professional role and responsibilities for student assessment may be described in terms of the following activities. These activities imply that teachers need competence in student assessment and sufficient time and resources to complete them in a professional manner.

Activities Occurring Prior to Instruction

(a) Understanding students' cultural backgrounds, interests, skills, and abilities as they apply across a range of learning domains and/or subject areas; (b) understanding students' motivations and their interests in specific class content; (c) clarifying and articulating the performance outcomes expected of pupils; and (d) planning instruction for individuals or groups of students.

Activities Occurring During Instruction

(a) Monitoring pupil progress toward instructional goals (b); identifying gains and difficulties pupils are experiencing in learning and performing; (c) adjusting instruction; (d) giving contingent, specific, and credible praise and feedback; (e) motivating students to learn; and (f) judging the extent of pupil attainment of instructional outcomes.

Activities Occurring After the Appropriate Instructional Segment (e.g. lesson, class, semester, grade)

(a) Describing the extent to which each pupil has attained both short- and long-term instructional goals; (b) communicating strengths and weaknesses based on assessment results to students, and parents or guardians; (c) recording and reporting assessment results for school-level analysis, evaluation, and decision-making; (d) analyzing assessment infor-

(continued on page 26)

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mation gathered before and during instruction to understand each students' progress to date and to inform future instructional planning; (e) evaluating the effectiveness of instruction; and (f) evaluating the effectiveness of the curriculum and materials in use.

Activities Associated with a Teacher's Involvement in School Building and School District Decision-Making

(a) Serving on a school or district committee examining the school's and district's strengths and weaknesses in the development of its students; (b) working on the development or selection of assessment methods for school building or school district use; (c) evaluating school district curriculum; and (d) other related activities.

Activities Associated with a Teacher's Involvement in a Wider Community of Educators

(a) Serving on a state committee asked to develop learning goals and associated assessment methods; (b) participating in reviews of the appropriateness of district, state, or national student goals and associated assessment methods; and (c) interpreting the results of state and national student assessment programs.

Each standard that follows is an expectation for assessment knowledge or skill that a teacher should possess in order to perform well in the five areas just described. As a set, the standards call on teachers to demonstrate skill at selecting, developing, applying, using, communicating, and evaluating student assessment information and student assessment practices. A brief rationale and illustrative behaviors follow each standard.

The standards represent a conceptual framework or scaffolding from which specific skills can be derived. Work to make these standards operational will be needed even after they have been published. It is also expected that experience in the application of these standards should lead to their improvement and further development.

1. Teachers should be skilled in *choosing* assessment methods appropriate for instructional decisions.

Skills in choosing appropriate, useful, administratively convenient, technically adequate, and fair assessment methods are prerequisite to good use of information to support instructional decisions. Teachers need to be well-acquainted with the kinds of information provided by a broad range of assessment alternatives and their strengths and weaknesses. In particular, they should be familiar with criteria for evaluating and selecting assessment methods in light of instructional plans.

Teachers who meet this standard will have the conceptual and application skills that follow. They will be able to use the concepts of assessment error and validity when developing or selecting their approaches to classroom assessment of students. They will understand how valid assessment data can support instructional activities such as providing appropriate feedback to students, diagnosing group and individual learning needs, planning for individualized educational programs, motivating students, and evaluating instructional procedures. They will understand how invalid information can affect instructional decisions about students. They will also be able to use and evaluate assessment options available to them, considering among other things, the cultural, social, economic, and language backgrounds of students. They will be aware that different assessment approaches can be incompatible with certain instructional goals and may impact quite differently on their teaching.

Teachers will know, for each assessment approach they use, its appropriateness for making decisions about their pupils. Moreover, teachers will know where to find information about and/or reviews of various assessment methods. Assessment options are diverse and include text- and curriculum-embedded questions and tests, standardized criterion-referenced and norm-referenced tests, oral questioning, spontaneous and structured performance assessments, portfolios, exhibitions, demonstrations, rating scales, writing samples, paper-and-pencil tests, seatwork and homework, peer- and self-assessments, student records, observations, questionnaires, interviews, projects, products, and others' opinions.

2. Teachers should be skilled in *developing* assessment methods appropriate for instructional decisions.

While teachers often use published or other external assessment tools, the bulk of the assessment information they use for decision-making comes from approaches they create and implement. Indeed, the assessment demands of the classroom go well beyond readily available instruments.

Teachers who meet this standard will have the conceptual and application skills that follow. Teachers will be skilled in planning the collection of information that facilitates the decisions they will make. They will know and follow appropriate principles for developing and using assessment methods in their teaching, avoiding common pitfalls in student assessment. Such techniques may include several of the options listed at the end of the first standard. The teacher will select the techniques which are appropriate to the intent of the teacher's instruction.

Teachers meeting this standard will also be skilled in using student data to analyze the quality of each assessment technique they use. Since most teachers do not have access to assessment specialists, they must be prepared to do these analyses themselves.

3. The teacher should be skilled in administering, scoring and interpreting the results of both externally-produced and teacher-produced assessment methods.

It is not enough that teachers are able to select and develop good assessment methods; they must also be able to apply them properly. Teachers should be skilled in administering, scoring, and interpreting results from diverse assessment methods.

Teachers who meet this standard will have the conceptual and application skills that follow. They will be skilled in interpreting informal and formal teacher-produced assessment results, including pupils' performances in class and on homework assignments. Teachers will be able to use guides for scoring essay questions and projects, stencils for scoring response-choice questions, and scales for rating performance assessments. They will be able to use these in ways that produce consistent results.

Teachers will be able to administer standardized achievement tests and be able to interpret the commonly reported scores: percentile ranks, percentile band scores, standard scores, and grade equivalents. They will have a conceptual understanding of the summary indexes commonly reported with assessment results: measures of central tendency, dispersion, relationships, reliability, and errors of measurement.

Appendix A *(continued)*

Teachers will be able to apply these concepts of score and summary indices in ways that enhance their use of the assessments that they develop. They will be able to analyze assessment results to identify pupils' strengths and errors. If they get inconsistent results, they will seek other explanations for the discrepancy or other data to attempt to resolve the uncertainty before arriving at a decision. They will be able to use assessment methods in ways that encourage students' educational development and that do not inappropriately increase students' anxiety levels.

4. Teachers should be skilled in using assessment results when making decisions about individual students, planning teaching, developing curriculum, and school improvement.

Assessment results are used to make educational decisions at several levels: in the classroom about students, in the community about a school and a school district, and in society, generally, about the purposes and outcomes of the educational enterprise. Teachers play a vital role when participating in decision-making at each of these levels and must be able to use assessment results effectively.

Teachers who meet this standard will have the conceptual and application skills that follow. They will be able to use accumulated assessment information to organize a sound instructional plan for facilitating students' educational development. When using assessment results to plan and/or evaluate instruction and curriculum, teachers will interpret the results correctly and avoid common misinterpretations, such as basing decisions on scores that lack curriculum validity. They will be informed about the results of local, regional, state, and national assessments and about their appropriate use for pupil, classroom, school, district, state, and national educational improvement.

5. Teachers should be skilled in developing valid pupil grading procedures which use pupil assessments.

Grading students is an important part of professional practice for teachers. Grading is defined as indicating both a student's level of performance and a teacher's valuing of that performance. The principles for using assessments to obtain valid grades are known and teachers should employ them.

Teachers who meet this standard will have the conceptual and applications skills that follow. They will be able to devise, implement, and explain a procedure for developing grades composed of marks from various assignments, projects, in-class activities, quizzes, tests, and/or other assessments that they may use. Teachers will understand be able to articulate why the grades they assign are rational, justified, and fair, acknowledging that such grades reflect their preferences and judgments. Teachers will be able to recognize and to avoid faulty grading procedures such as using grades as punishment. They will be able to evaluate and to modify their grading procedures in order to improve the validity of the interpretations made from them about students' attainments.

6. Teachers should be skilled in communicating assessment results to students, parents, other lay audiences, and other educators.

Teachers must routinely report assessment results to students and to parents or guardians. In addition, they are frequently asked to report or to discuss assessment results with other educators and with diverse lay audiences. If the results are not communicated effectively, they may be misused or not used. To communicate effectively with others on matters of student assessment, teachers must be able to use assessment terminology appropriately and must be able to articulate the meaning, limitations, and implications of assessment results. Furthermore, teachers will sometimes be in a position that will require them to defend their own assessment procedures and their interpretations of them. At other times, teachers may need to help the public to interpret assessment results appropriately.

Teachers who meet this standard will have the conceptual and application skills that follow. Teachers will understand and be able to give appropriate explanations of how the interpretation of student assessments must be moderated by the student's socio-economic, cultural, language, and other background factors. Teachers will be able to explain that assessment results do not imply that such background factors limit a student's ultimate educational development. They will be able to communicate to students and to their parents or guardians how they may assess the student's educational progress. Teachers will understand and be able to explain the importance of taking measurement errors into account when using assessments to make decisions about individual students. Teachers will be able to explain the limitations of different informal and formal assessment methods. They will be able to explain printed reports of the results of pupil assessments at the classroom, school district, state, and national levels.

7. Teachers should be skilled in recognizing unethical, illegal, and otherwise inappropriate assessment methods and uses of assessment information.

Fairness, the rights of all concerned, and professional ethical behavior must undergird all student assessment activities, from the initial planning for and gathering of information to the interpretation, use, and communication of the results. Teachers must be well-versed in their own ethical and legal responsibilities in assessment. In addition, they should also attempt to have the inappropriate assessment practices of others discontinued whenever they are encountered. Teachers should also participate with the wider educational community in defining the limits of appropriate professional behavior in assessment.

Teachers who meet this standard will have the conceptual and application skills that follow. They will know those laws and case decisions which affect their classroom, school district, and state assessment practices. Teachers will be aware that various assessment procedures can be misused or overused resulting in harmful consequences such as embarrassing students, violating a student's right to confidentiality, and inappropriately using students' standardized achievement test scores to measure teaching effectiveness.

Invitation to Users

The associations invite comments from users that may be used for improvement of this document. Comments may be sent to: • Teacher Standards in Student Assessment, American Federation of Teachers, 555 New Jersey Avenue NW, Washington, DC 20001; • Teacher Standards in Student Assessment, National Council on Measurement in Education, 1230 Seventeenth Street NW, Washington, DC 20036; or • Teacher Standards in Student Assessment, Instruction and Professional Development, National Education Association, 1201 Sixteenth Street NW, Washington, DC 20036.

The Committee that developed this statement was appointed by the collaborating professional associations: James R. Sanders (W. Mich. Univ.) chaired the Committee and represented NCME along with John R. Hills (Florida State Univ.) and Anthony J. Nitko (Univ. of Pittsburgh). Jack C. Merwin (Univ. of Minnesota) represented the American Association of Colleges for Teacher Education, Carolyn Trice represented the American Federation of Teachers, and Marcella Dianda and Jeffrey Schneider represented the National Education Association.

Portfolio Assessment in Our Schools: Implementation, Advantages, and Concerns

By Carole Newman and Lynn Smolen, The University of Akron

The use of portfolios as an alternative assessment tool is being widely investigated and adopted by a growing number of school districts across the United States (Vavrus, 1990; Hansen, 1992). While frequently implemented to assess literacy development, research has also led to their use as an "authentic" assessment measure of student academic growth in the social studies, math, and science curricular areas (Collins, 1990). Portfolios have been identified by the Association for Supervision and Curriculum Development as one of the three current major trends in curriculum development, and in Vermont, extensive field research has been conducted which is expected to culminate in the statewide adoption of portfolios, for use in conjunction with standardized tests, to assess writing and math skills (Mills, 1989).

Adopted in both inner- and outer-city schools, teachers from kindergarten through college have conducted research leading to the successful use of student portfolios to provide a process assessment, demonstrating each student's individual progress, as well as a product assessment in which student work can be judged against a pre-established and mutually agreed upon standard of excellence.

The purpose of this review is to make available to the practitioner a summary of considerations regarding portfolios. The advantages of portfolios for students, teachers, parents, and administrators are presented, along with some of the problems of implementation. Suggestions on how to start a portfolio program as well as possible portfolio contents and evaluation concerns are also addressed.

Portfolios contain a carefully selected sample of student work which demonstrates both the goals of instruction and the student's progress toward those goals. How much and what to include should be a joint decision between student and teacher. The selection should provide an adequate sample of student work which will enable the various audiences (students, teachers, parents, and administrators) to develop an adequate perspective of the student's goal attainment.

Advantages of Portfolio Development

In addition to the obvious advantage of improving assessment by providing ongoing evaluation of student progress, research on portfolios describes many other positive outcomes from using the portfolio process (Hansen, 1992; Werner, 1992; Paulson, Paulson, & Meyer, 1991; Tierney, Carter, & Desai, 1991; Vavrus, 1990). By carefully determining which sample of student work best represents the educational focus and by establishing criteria, students and teachers, as well as parents and administrators, are better able to determine the intended outcomes of the instructional process and to gauge how successfully those outcomes are being achieved. The door is also opened for dialogue among these key stakeholders as they discuss the contents produced by the students, and there is opportunity for improved understanding between home and school.

The following are some of the other advantages for students, teachers, parents, and administrators that are an outgrowth of portfolio assessment plans.

Advantages for Students

Perhaps one of the most important aspects of the portfolio process is that it empowers students to make decisions about their learning by actively involving them in setting goals, in developing criteria, and in self-evaluating. Because the focus of portfolio assessment is on accurately reflecting each student's strengths and needs based upon his or her authentic classroom work, students are drawn into the process of deciding which pieces of work represent their skill attainment and/or represent their development toward attaining their educational goals.

By working collaboratively with the teacher and classmates, standards of excellence are established which provide a framework for learning (Graves, 1992). Students play an integral part in determining the criteria by which their work will be judged, and, therefore, have a sense of ownership of the evaluation process and a clearer understanding of the assessment plan. The sense of ownership also promotes the feeling among students that they are working toward self-enhancement rather than performing for the teacher. The evaluation criteria can provide them with benchmarks so they can monitor their own growth and gain confidence in their ability to progress in their learning. Through this self-evaluation students develop a sense of personal history and become more aware of their own effective learning experiences. By having a good sense of their past, they can better plan for their future learning and engage in effective goal setting behaviors (Tierney et al., 1991; Graves, 1992). Growth is also supported by sharing portfolio contents with classmates to encourage an exchange of ideas and get feedback as each student sees how his or her work fits into the range of academic efforts (Levi, 1990; Seidel, 1989).

As part of the self-assessment process, students are taught how to thoughtfully reflect upon the work included in their portfolio. As children grow in their ability to make reflective statements, they go from first naming an item and saying they like it, to more sophisticated statements in which they compare and contrast earlier efforts with their current work. Through reflective statements, each student learns to evaluate his or her academic

performance by explaining what is important about the evidence that is included and what is says about him or her as a learner. A student might choose a paper to represent his or her attainment of reading or arithmetic skills, or to show growth in editing and revising writing samples. Reflective statements may also reveal changes in attitudes, feelings children have about their ability to succeed in an academic environment, or goals for future development. Through these attempts to explain how their selections demonstrate their progress and to identify areas to improve upon, students become more self-motivated, self-confident, independent, and responsible as learners and have opportunities to develop skills in self-evaluation which will have life-long benefits.

Mark Carter (1992), while speaking at the International Reading Association Convention, pointed out that portfolios seem to be especially beneficial for lower-achieving students. These students have more opportunity to show their strengths in a portfolio than they do on a standardized test. The test is a sample of performance at one point in time, while portfolios provide them with multiple assignments in which they can demonstrate the unfolding of their skills over an extended period. This yields a more complete picture of the students' performance in the classroom.

Advantages for Teachers

As a natural outgrowth of daily classroom activity, portfolio evidence allows teachers to use student products to measure growth more effectively than it can be measured by the limited sampling of traditional assessment practices (Winograd, Paris, & Bridge, 1991). Class time is also put to better use by concentrating student efforts on authentic activities rather than preparing for tests which yield a limited profile of student needs and accomplishments (Clay, 1990; Tierney et al, 1991).

One of the assessment strategies frequently used in portfolio classrooms is conferencing. During the conference teacher and child collaborate on important decisions about what to include, and analyze contents to assess progress, instructional needs, and set goals (Levi, 1990; Vavrus, 1990). These conferences help the teacher make informed decisions about what and how to teach to meet individual needs and provide insights that allow teachers to tailor instruction for more appropriate and meaningful learning experiences. The conferences also tend to promote a climate of mutual respect and trust and engender more positive teacher attitudes about stsudents (Wolf, 1990).

Since portfolio contents represent the goals of classroom learning, teachers must make professional decisions regarding the focus of their instruction. While the making of educational decisions is inherent in the role of the teacher, this responsibility is too often neglected by educators who are forced to judge student success, and their own success as a teacher, by standardized tests that bear little or no relationship to normal classroom activity. Using portfolios as a primary assessment tool requires the teacher to again make the professional choices that will allow students maximum growth. These goals of education then serve as the driving force behind classroom instruction and enable the teacher to decide on appropriate curriculum and instructional practices, and to have a means of assessment that is congruent with the instructional program.

Portfolios also allow several teachers to share information about students they have in common. This can help in defining strengths and problem areas so that consistent intervention strategies can be developed. In addition, the sharing of student portfolios provides an excellent forum in which teachers can work cooperatively as they exchange ideas and get feedback from each other.

Advantages for Parents

One of the difficult tasks of parenting is being able to monitor the academic progress of one's child by looking at a letter grade on a report card or a number on a standardized test. While these symbols provide some information regarding each child's relative position within a given population, they do little to help parents form accurate perceptions about their own child's strengths or academic needs or the type of instruction they are receiving. Portfolios, on the other hand, allow parents to examine actual classroom products that have been selected and organized in a meaningful way. They provide a vehicle for communication between parent and teacher which can help parents better understand the focus of instruction, identify their child's needs and work together with the teacher to develop strategies to support learning (Flood & Lapp, 1989).

The sharing of portfolio contents between parent and child also offers opportunities for open communication about school. By discussing the reflective statements that accompany each sample, parents are better able to assess their child's feelings about his or her progress and competencies as a learner. Examples of work in progress that represent the process of skill development help parents to form a clearer picture of the unfolding of academic growth and may also better prepare them to offer encouragement and emotional support. This improved communication is likely to strengthen the important cooperative link between home and school.

Advantages for Administrators

Administrative responsibilities at the building level include evaluating the effectiveness of classroom teachers. To varying degrees this will involve judging teachers based upon their students' performance on standardized tests which may have little relevance to actual classroom instruction.

In evaluating teachers who have implemented portfolios as an alternative student assessment tool, the principal can better determine the focus of classroom instruction through the review of items selected for inclusion. While this may not present the whole picture, it does represent aspects of the educational program that are valued by both the teacher and students.

(continued on page 30)

The teacher's abilities to successfully guide students as they progress toward achieving the desired learning outcomes can also be assessed by examining included samples of student work, and the reflective statements can provide valuable information about the emotional climate in the classroom.

Administrators can also use portfolios to help ensure that classroom instructional goals are congruent with the goals of the district (Winograd et al., 1991) and any discrepancies in goals can be addressed and monitored by periodic portfolio review. The information about classroom activities will also prepare principals to more effectively respond to parental concerns and will enable them to provide examples of the focus of the instructional program.

While the above examples of the advantages of portfolio assessment are not intended to be exhaustive, the authors hope they will identify several areas worthy of further consideration.

Concerns of Portfolio Implementation

Despite some clear advantages for the use of portfolios, there are some areas of concern. First, portfolio assessment can be time-consuming and demanding for teachers. Organizing and managing the collection of multiple measures on 30 students in an elementary classroom or 150 students at the secondary level is not a simple task and procedures must be carefully established to do so. Secondly, teachers need to become sophisticated in a wide variety of assessment techniques. They need to know how and when to record student behaviors and what types of tools are best to use. They also need to be knowledgeable and experienced in the analysis and interpretation of student work so they will be able to use this information effectively for planning instruction.

Russavage (1992) reports that the teachers she studied who were involved in portfolio development and evaluation have expressed a need for more training and practice in scoring and evaluating portfolios. Her research also indicates that teachers with more years of experience and with experience at various grade levels have a better concept of appropriate student performance. They are better able to judge student progress when looking at portfolios than are teachers with less experience. She also cautions that portfolio implementation can be overwhelming for beginning teachers. Russavage's findings are supported by Harlin and Lipa's (1992) study of teacher trainees at the undergraduate and graduate levels. The researchers found that the trainees interpreted portfolio data differentially depending upon their training. Those with more experience in collecting and analyzing data on students' reading and writing behaviors were better at interpreting the data in portfolios. These researchers concluded that training in both formal and informal evaluation and assessment procedures is essential if teachers are going to use portfolios as a means of evaluating students. It seems likely that through increased teacher collaboration, training, and administrative support, appropriate decisions regarding expectations of student performance can be made in the planning stages of portfolio implementation.

If portfolios are to be used on a large scale as a means of measuring achievement, as in Vermont and Kentucky, many other management issues need to be resolved. In Vermont, for example, officials found that 42 percent of the eighth grade math portfolios in 1991 were "unscorable" because they had inappropriate or insufficient materials (Wagner, 1992). This problem can be avoided by carefully establishing and training teachers in procedures before widespread use.

While these problems are not insurmountable, they do require attention and the allocation of resources. However, once recognized and dealt with, the advantages of portfolios seem to far outweigh the management issues.

Getting Started with Portfolios

Tierney et al. (1991) emphasize the need for teachers to help students develop a greater sense of responsibility for their own work and their own learning. From the very beginning teachers should discuss the portfolio process with students, and show examples that point out the benefits they will gain by keeping a portfolio. In this way, students become supporters of the process and collaborators with teachers in their learning and assessment.

In planning for the implementation of portfolios, teachers need to decide:

- which instructional goals should be reflected in the portfolios.
- which kinds of evidence will show progress toward the goals they have identified.
- if the portfolios will only include evidence of student growth that test scores do not capture.
- if the portfolios will corroborate information revealed by test scores (Vavrus, 1990).

An important first step that teachers can take to get students started with portfolios is to help them save a wide variety of examples of their work in a folder. From this broad collection, students can draw samples throughout the school year to showcase their best efforts.

Teachers should also help students learn to write reflections and self-evaluation of their materials. This can be done by asking students to focus their attention on one piece or several pieces and to respond to certain guided questions. For example, Vavrus (1990, p. 52) suggests the following questions for a writing piece:

- What do I like most about this work?
- What was important to me when I wrote it?
- If I revised this, what would I change?
- How has my writing changed since I wrote this?
- Is it my best sample?

Students' responses to these types of questions can become an important part of the portfolio, yielding information about self-perceptions of the learners, their value system, and motivation. Teachers may also include their own anecdotal records from conferences and observations regarding progress toward instructional goals. These can be especially valuable in assessing student growth (Vavrus, 1990).

Periodically throughout the school year, teachers should help students update their portfolio by teaching them how to select their best work and eliminate other materials that are no longer representative of their level of learning. Students can be taught to select items that show their strengths, interests, versatility, and growth over time (Tierney et al., 1991).

When teachers value student opinions, choices, and self-reflections, the students are more likely to develop a sense of pride and greater responsibility for their own learning.

It is important for teachers to involve parents in the portfolio process. This can be done by periodically sending home newsletters and by making portfolios available for review at a scheduled open house. Some teachers also have students bring their portfolios home to share with their parents so that they may become better informed about assessment procedures and have the opportunity to offer their own comments, thus becoming partners in the evaluation.

Another important aspect of portfolio implementation is the student-teacher conference, which has been previously discussed. Valencia and Pearson (1987) consider this is to be a critical feature of the assessment and recommend that teachers plan conferences periodically with students to help them analyze, compare, and contrast their pieces so that they both can discover needs and strengths by working together.

The sharing of portfolios with classmates can provide students with ample opportunities to discuss their portfolios with each other so that they can learn not only from their own efforts but also from the examples provided by others. Learning by example can be further enhanced by the teacher preparing his or her own portfolio which can be shared with students. This can improve student-teacher rapport by giving students new insights about their teacher and it can serve as a model of reflective behavior (Kearns, 1992).

Materials to Include in Portfolios

Because portfolio assessment can be quite time-consuming, it is best if teachers start by focusing on one or possibly two subjects. For example, students could develop a reading-writing portfolio, or they could develop a portfolio for math or science. The materials selected for a portfolio should be authentic and represent real learning activities occurring in the classroom. For a reading-writing portfolio, the following items might be selected: written responses to literature; literature extensions such as webs, charts, and timelines; excerpts from student journals; lists of books read by the student; final draft of writing attached to initial drafts; audio tapes of oral reading; written reports from various content areas; student reading/writing interviews; and an informal reading inventory (Vavrus, 1990; Tierney et al., 1991); Russavage, 1992).

A science portfolio might include photos of experiments, questions related to the science textbook, reports on experiments, diagrams, and journal entries reflecting concepts students have developed. In math, a student might document growth with examples of story problems he or she wrote to demonstrate math procedures, explanations of why a certain mathematical process works, samples of computations, and books read with a math theme. Math journal entries might also be included along with questions students have about concepts they do not fully understand. At a later time, students can write answers to their questions demonstrating their development of a higher level of mathematical functioning.

Once procedures for portfolio use are well established in a particular subject area, teachers may wish to expand their use into other areas of the curriculum. A decision to do so should include consideration of the students' readiness to assume increased responsibility in evaluating their progress, review of the necessary time-management concerns, and an evaluation of the support systems available to the teacher. It is much more effective to begin with a small, manageable portfolio plan and to expand as experience and resources allow than it is to undertake an untested system that requires more time and skill than a teacher may currently possess.

Concerns with Evaluating Portfolios

One issue that must be clarified from the onset is how to evaluate student portfolios. Decisions must be made to determine if student performance will be judged solely by portfolio evidence or in conjunction with other, more traditional measures. Teachers and administrators must be concerned with reliability and consistency among judges and with ensuring that students are in fact performing within grade level expectations. This can be accomplished by consultation among teachers to clarify these expectations and to establish standards for determining if a student's portfolio demonstrates excellent, adequate, or inadequate performance. Judgments also need to be made in terms of the type and amount of materials to include. This does not mean that every portfolio should have exactly the same contents, but by developing general categories of materials for inclusion, schools will be better able to assess students in a manner that is consistent and reliable across individual classrooms within a building, district, or state.

Current literature offers a variety of suggestions for developing procedures to evaluate portfolios. Vavrus (1990) suggests portfolios reflect established instructional goals and that they be evaluated in terms of the students' demonstrated growths toward these goals or established standards of excellence. Tierney et al. (1991) suggest that students should be involved in criteria selection. Their preference is for using narrative, which focuses on students' strengths and needs rather than graded evaluations of portfolios. They also suggest that if grades are to be assigned, multiple grades be used. For instance, separate grades can be given for assessing such components as a student's improvement, effort, range of projects, and student established future goals.

Another suggestion made by Wolf, LeMahieu, and Eresh (1992) is that teachers within buildings and districts engage in periodic cross-reading. This entails selecting a sample of portfolios reflecting excellent, average, and inadequate student growth to be read and scored by another teacher. Through this process teachers can come to consensus regarding grade level standards. It also provides them with a view of teaching and learning in other class-

(continued on page 32)

rooms and it offers the opportunity to share and get feedback from colleagues (Newman, Leathers, Smolen, Newman, & Butcher, 1992).

Decisions regarding how portfolios will be evaluated must be made by each school, district, or state in which they are adopted. There is no one method that will be appropriate for all situations. However, by reviewing the plethora of literature that is currently available on portfolios, professionals can be guided in determining what is most appropriate for their students.

As educators move toward more performance-based assessment, the potential advantages offered by portfolios must be considered. Growing out of authentic classroom practices, portfolios provide a wholistic view of student performance. They allow for the alignment of instruction and assessment and provide the opportunity for students to be more closely involved in reflecting upon and assessing their own growth. They also offer a vehicle for increased communication among teachers and between home and school. Although the implementation of portfolios is labor-intensive and time consuming, the gains in terms of improved education seem to warrant their consideration as part of the assessment process (Smolen & Newman, 1992).

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Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

What advice would you give to doctoral students?

Pick topics to do research on that have policy implications, however faint. Don't work on issues merely to be published.

—*David Berliner, Arizona State University*

The student should love scholarship, love his/her area of study, and should love to study and write.

—*Jeanne Chall, Harvard University*

I would not give generic advice—each particular doctoral student calls forth different forms of support. I guess I would say, "Welcome to the finest work on earth."

—*Christopher Clark, Michigan State University*

Prepare a version of your dissertation for publication immediately after completing it. Write a proposal for funded research the minute you begin your academic career. Don't write a book too soon.

—*Lyn Corno, Teachers College Columbia University*

To succeed as an academic, you have to either love teaching or love research (or both). If you do, go to the type of institution that values what interests you. If you don't, find a different career.

—*Edward Deci, University of Rochester*

In regard to your doctoral program, seek out an institution where there is at least one professor who has attracted your admiration for both leadership in the field of education and concern for mentoring graduate students very carefully.

—*John Goodlad, University of Washington*

Try to develop an interdisciplinary understanding (qualitative and quantitative) of what is demanded by "academia" today.

—*Maxine Greene, Teachers College Columbia University*

Work on the integration (intellectual, methodological, conceptual) of your teaching, research, and service. See that one informs the others and that questions raised in teaching and service are attended to in your research. I also give them my own "unbiased, totally objective" view of the politics of academia and how to maneuver through them during the first few years in the professorate.

—*Gary Griffin, University of Arizona*

Strive to find out who the most competent professors are in your university, then take graduate coursework with them irrespective of their areas of specialization. In general, the best students are prepared by the best professors.

—*W. James Popham, IOX Assessment Associates*

I advise my doctoral students headed for academia to establish a program of research that they intend to pursue over time and that will be cumulative in nature. I advise them to focus their work on important questions, specifically, and generally to hold high standards for their own work.

—*Andrew Porter, University of Wisconsin-Madison*

Do a first class dissertation in an area that promises to be of long term interest and give serious attention to becoming a good teacher.

—*Kevin Ryan, Boston University*

I advise doctorate students to have a clear focus of their career goals. If they know what they want to do with their degree, then their studies become focused and research experiences can be designed to reinforce their studies and interests.

—*Jane Stallings, Texas A&M University*

Keep up an effort to understand the problems and practices of education in the field. Help educators in the schools to understand more fully their problems and the resources of parents and others in the community who can help solve these problems.

—*Ralph Tyler, Center for Advanced Study in Behavioral Sciences*

New Direction in Research *(continued from page 17)*

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This paper was presented as the keynote address at the Mid-Western Educational Research Association meeting Chicago, October 14-16, 1992.

Portions of this paper will appear in Good, T. (In press). Teacher expectations. In L. Anderson (Ed.), "Encyclopedia of educational research" (6th ed.). New York: Macmillan.

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The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local, and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

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MID-WESTERN EDUCATIONAL RESEARCHER

• Official Publication of the Mid-Western Educational Research Association •

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A little over three years ago Isadore Newman approached me with the prospect of editing the publication of the Mid-Western Educational Research Association. At the time the newsletter format mostly included Association activities and selected presentations made at the annual meeting. In accepting the position as co-editors we also accepted the challenge of expanding the format to that of a journal. We quickly began establishing an editorial board and sought their advice concerning everything from the title of the journal to its general format. Self-imposed deadlines causing time constraints and an unsteady flow of manuscript submissions, paired with a desire to establish quality through the recommendations of reviewers, led to some stress and frustration. However, the project has been a very rewarding one. Educational leaders across the country have spoken very positively about the Association and its journal, and a recent survey indicated that the membership also is pleased with their journal.

I am taking this opportunity to personally thank those who have helped to make the *Mid-Western Educational Researcher*, a success: First I want to thank Isadore Newman who gave a young faculty member a chance to work on an exciting project with a quality colleague; I thank Dennis Leitner who appointed us; Ayres D'Costa, Barbara Plake, Ken Kiewra and the Executive Committee who have provided us with unwavering support; the authors of manuscripts that were accepted as well as those that were not, you have helped to define the publication; the Editorial Board and numerous other reviewers whose judgments have helped to establish a quality publication; the membership of MWERA who make the Association something very special; the Department of Educational Psychology at Ball State University; and lastly I thank my family and especially my wife who goes to bed alone too many nights so that her husband can work on one more project.

—*Greg Marchant*

ON THE COVER

Ball State University is one of the largest granters of professional education degrees in the United States. The Teachers College's reputation for leadership is the result of its emphases on educational practice and applied research. The teacher education program is designed to prepare students for teaching in preschool, elementary, junior high, and senior high schools. Teachers College offers doctoral, specialist, and master's degree programs in a variety of subjects. The Department of Counseling Psychology and Guidance Services offers a CACREP accredited master's degree program and an APA accredited Ph.D. program. The Department of Educational Leadership offers master's and doctoral programs in educational administration and supervision, Ed.S. and M.A.E. degrees in curriculum, an Ed.S. in school superintendency, and master's degrees in executive development for public service and applied gerontology. The Department of Educational Psychology's M.A. and Ph.D. programs in school psychology are NASP and NCATE approved; the Ph.D. program is also APA accredited. The Department of Elementary Education offers master's and doctoral degrees in elementary education, early childhood education, and reading. The Department of Secondary, Higher, and Foundations of Education offers master's degrees in secondary education, student personnel, and junior/high middle school education. The Department of Special Education offers M.A., M.A.E., Ed.S., and Ed.D. degrees.

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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FEATURE

Chaos Modeling: An Introduction and Research Application
By Isadore Newman and Carol Wessinger, The University of Akron, and Ron Bohner, Akron Child Guidance Center
2

ARTICLES

The Relationship of Test Anxiety and Self-Concept to Patterns of High School Students's Achievement
By Janice E. Williams, Oklahoma State University
7

MWERA Communication and Update/Member-At-Large
13

Member-At-Large Report
By Sharon McNeely, Northeastern Illinois University
14

Call for Proposals
15-22

Twin Towers of Educational Leadership at Stanford University:
23-29

User Friendly, Intellectually Deep: An Interview with Elliot Eisner
By Gregory J. Marchant, Ball State University
24

Reflections on Teacher Education: An Interview with Lee Shulman
By Gregory J. Marchant, Ball State University, and Isadore Newman, The University of Akron
27

Metamorph™: Computer Support for Qualitative Research
By Wendy L. Shapiro, Kent State University, Rebecca Clemente, Ball State University, Leo W. Anglin, Berry College, and P. Barton Richard, Expansion Software International, Inc.
30

Performance Assessment
By David Sweet, U.S. Department of Education
35

Voices in Education
Inside Back Cover

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Chaos Modeling: An Introduction and Research Application

By Isadore Newman and Carol Wessinger, The University of Akron,
and Ron Bobner, Akron Child Guidance Center

Abstract

The purpose of this article is to introduce chaos theory and chaos modeling at a basic conceptual level. The article is intended to be a primer for the more comprehensive works of Gleick, Peterson, and Briggs & Peat. The intended audience is professionals in the behavioral sciences; therefore, the article relates chaos theory to more traditional methodologies. There has been an overwhelming amount of popular literature espousing chaos theory as a panacea for understanding human behavior. This article questions the appropriateness of such a position while supporting the potential value of chaos theory for the behavioral sciences.

Chaos theory is being used as a tool to study a wide variety of phenomenon. In recent years, subjects as diverse as quantum mechanics (Pool, 1989d), astronomy (Pool, 1989f), population dynamics (Pool, 1989b), turbulent flows (Gleick, 1987), disease (Babloyantz & Destexhe, 1986), economics (Pool, 1989f), epidemiology (Pool, 1989a), weather (Pool, 1989e), and geology (Gleick, 1987) have been analyzed in this context. The results have been startling, exciting and challenging. Not only are these applications of the theory providing the scientific community with new information, they are also providing the grist for a reanalysis of what it means to "do science." The basic tenets of the positivistic reductionist approach to scientific inquiry so prevalent in Western society are being challenged.

The purpose of this article is to explain chaos theory, to relate it to traditional research methodologies, and to discuss its practical application to behavioral research. The philosophical implications of chaos theory will be discussed, especially as they relate to quantitative and qualitative methodologies.

It should be noted from the outset that the application of chaos theory involves a fair amount of sophisticated mathematics (Schuster, 1988) by someone who is comfortable working with nonlinear dynamics. For the purposes of this article, an intimate knowledge of advanced mathematics is not required to understand chaos theory, what it explains, and why it is creating so much excitement in the scientific community.

Chaos theory is a philosophical and empirical approach built on the basic assumption that there is a discoverable dynamic hidden within behavior that appears to be random and chaotic. Pool (1989f) labeled it "deterministic randomness." Chaos, in the context of chaos theory, can be defined as nonrandom behavior that cannot be accurately predicted. Chaotic systems are complex and display behavior that appears to be random. Further study using the analytical tools of chaos theory reveals an underlying determinism which helps explain the system's behavior. Though the behavior of chaotic systems may have defined parameters, exact prediction is not possible.

One way to demonstrate this "deterministic randomness" is to play the chaos game (Nova, 1989). Suppose that three points are placed on a piece of paper in a pattern that forms an equilateral triangle. The first point is labeled 1 and 2, the second, 3 and 4 and the third, 5 and 6. One of these points is chosen at random as the starting point.

The game is played by rolling a die, moving halfway from the current position to the point whose number came up, and placing a new point at this position. Since each roll of the die is a random event, it is logical to assume that the distribution of points on the paper is also random. However, if the game is played long enough, a triangle-within-triangle pattern emerges (Figure 1). A very orderly pattern arises as the result of a supposedly random process.

Figure 1
(Peterson, 1988)

Chaotic systems are characterized by three important concepts: (1) sensitivity to initial conditions, (2) sensitivity to influx, and (3) self-similarity or nesting (fractals). Sensitivity to initial conditions means that small changes in the initial values of variables in a system can greatly affect the system's behavior. This dependence, also called the "butterfly effect," was first described by Edward Lorenz in his study of weather forecasting. It implies that a butterfly flapping its wings in Beijing can affect global weather conditions. Lorenz set up nonlinear equations that des-

cribed atmospheric conditions and programmed them into a computer to project future outcomes. Two projections using the same starting values to three decimal places while the other had started with the same values but to six decimal places. A slight change in initial values of the variables drastically affected the projected results. Lorenz concluded that long range weather forecaasts were not possible because initial conditions can never be known with enough accuracy.

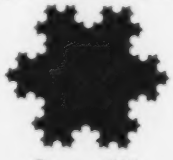
Even if researchers could identify initial conditions with complete accuracy, another characteristic of chaotic systems would prevent accurate prediction. This feature, sensitivity to influx, refers to the fact that in chaotic systems, small changes occurring during the system's operation can drastically alter the system's behavior on both a short- and long-term basis. These changes can be a value change for a parameter in the system or the introduction of a new parameter. When a system encounters such a change, its behavior begins to oscillate, tending toward multiple outcomes. These branchings, or bifurcations, are a breakdown in the linear behavior of the system. A series of bifurcations causes the system to fragment itself into a chaotic state. When researchers plot the behavior of such a system, they find periods of stability between the chaotic states. Period doubling refers to the amount of time it takes a system to return to stability after a period of chaos. Mitchell Feigenbaum discovered a mathematical constant that could be used to predict these period doublings, enabling researchers to predict when a system would become chaotic.

Chaotic systems return not only to stability but to a previous pattern of behavior. This quality, called self-similarity or nesting, is defined as symmetry or consistency across scale. Self-similarity can be represented by the fractal, a geometric shape conceived by Benoit Mandelbrot. A fractal is characterized by replication of a larger shape on smaller and smaller scales. The replications contain the same proportions as the original shape. Fractals abound in nature—frost crystals, a head of broccoli, the branching of a tree.

Fractals can also be created on paper. Imagine an equilateral triangle. On each side of the triangle draw another equilateral triangle one third the size of the original and center it on the middle of each side. Continue this process indefinitely. It is not hard to imagine that the perimeter of the figure increases to infinity. This figure (Figure 2) is known as the "Koch Island" and was introduced to mathematicians by Helge von Koch in 1904 (Peterson, 1988).

Figure 2

The first four stages in constructing a Koch snowflake.



(Peterson, 1988)

Fractals however represent more than patterns within patterns. They illustrate the concept of partial dimensions, called fractals dimensions. One way of visualizing a dimension between one (line) and two (plane) is to create a Peano curve. This curve was conceived by Giuseppe Peano in 1890 (Briggs & Peat, 1989). The curve is created by starting out with a straight line which is successively folded. It can be shown that the line can touch every point in the plane without ever crossing itself. In the beginning, the line touches every point in the plane, representing two dimensions. When the line takes up only a percentage of the points in the plane, it can be thought of as having a dimension greater than one and less than two. Fractal dimensions describe the complexity of a shape; the greater the fractal dimension, the greater the complexity. The coastline of Great Britain has a fractal dimension of 1.26, while the fractal dimension of the human brain is 2.73 to 2.79 (Briggs & Peat, 1989).

A specific type of fractal, the "strange attractor" is used to represent the behavior of chaotic systems. In classical (linear) dynamics, "attraction" is the concept that systems tend toward an end behavior. The attractor is a shape that represents this end behavior and it is determined by plotting the movement of the system through time. A trajectory is formed by a series of points that represent the values of system variables at a given moment in time. These plottings are called phase space diagrams. In linear, nonchaotic systems, the attractor may be a point of spiral. For chaotic systems, the attractor is complex, displaying ever-changing trajectories, hence the name "strange." Though the points and resulting trajectories in a strange attractor appear random, over time a pattern emerges. This pattern has definable parameters and an overall shape that is bounded and delimited. Once the attractor for a chaotic systems is plotted, researchers have identified the basic parameters of the system and can make predictions within those parameters.

Calculating the fractal dimension of the strange attractor gives an idea of the complexity of the system, (or the degree to which the trajectory folds back on itself in self-similar patterns). The higher the fractal dimension, the more complex the behavior of the system. Researchers have constructed phase space diagrams from EEG data and have calculated the fractal dimensions of the resulting attractors (Rapp, 1985). For subjects resting with their eyes closed, EEG attractors showed a fractal dimension of 2.3. Babloyantz and Destexhe (1986) found that for patients undergoing epileptic seizures, the fractal dimension of EEG attractors was about 2.

Methodology and Paradigms

Chaos theory provides a method for describing and explaining the behavior of nonlinear systems. It tends to be different from traditional scientific theory in that it focuses on interrelationships rather than individual elements. It views interactions in their entirety. It uses a systems approach rather than a reductionist approach.

(continued on page 4)

Chaos Modeling *(continued)*

A qualitative vs. quantitative approach is useful in comparing chaos theory to traditional educational research methodologies. Quantitative research involves assigning numbers to objects and using this data in predictions, if enough information is available. Emphasis is placed on reliability and validity. Theories are conceived and analyses are conducted to test these theories to see if observed data fit the theory. Qualitative research, on the other hand, looks at the data and derives its theory from the data. Interpretation, explanation and insight emerge from the data. Every situation is unique and emphasis is placed on describing a situa- for its own sake. While these definitions are oversimplifications, they serve to illustrate the point that qualitative and quantitative methodologies have sometimes been viewed as mutually exclusive (Cook & Reichardt, 1979). More recent discussions have suggested that this is a false dichotomy, that these methods are part of an interactive continuum (Newman & Benz, in press).

How one deals with the "deterministic randomness" of chaos depends on one's philosophical perspective. Quantitative researchers would say that the behavior is not truly random. They would strive to adequately quantify all of the system's variables so that accurate prediction would be possible. Quantitative researchers work to explain and eliminate randomness. Qualitative researchers, however, would consider the "randomness" of the system as part of the data, a manifestation of the system that should be worked into theory rather than eliminated. These two perspectives can be illustrated by how they treat outliers. From a quantitative perspective, the outlier is considered a meaningful part of the data and is retained in the analysis.

Chaos theory follows a qualitative approach in its methodologies. Chaos researchers study a system in order to see what emerges from it, using a strange attractor to describe the behavior of the system. The process that produces the strange attractor involves the plotting of a great many data points. These data points create a pattern that is not apparent when only a few points are plotted. Points that at first may seem to represent extreme behaviors often become part of the strange attractor as it emerges. In describing human behavior, an extreme score may thus become part of a pattern of behavior which may not be apparent until many data points are plotted.

Other parallels exist between chaos theory and traditional research methodologies. The strange attractor can be thought of as representing an underlying construct or principle of a system and can be equated conceptually with a factor in a factor-analytic sense. Factor analysis is done to produce factors which are assumed to measure or represent underlying constructs in the behavior being studied. Factors are derived by running a series of correlations to determine the structure of the data. Likewise, a strange attractor is produced by plotting what could be considered a series of correlation points, or the relationships between variables at a given moment in time. The shape that results is one that can be replicated in further studies of the same system. The phase space diagram of a strange attractor can be compared to a linear regression scatterplot. The latter is an approximation of the relationship between variables as defined by the scatterplot. The strange attractor shows the interrelationships in a nonlinear, dynamic system. Another feature of chaotic systems, the bifurcation, can be compared to a trend line that splits, going in two directions. Accurate prediction is possible until the system's behavior branches into alternative outcomes.

As the complexity of a system increases, so does the number of variables needed to describe its behavior. The attractor will have as many dimensions as there are variables being measured. The behavior of a simple system may be represented by two or three dimensions, while a more complicated system will require many more dimensions. Obvioŭsly, an attractor of four or more dimensions is hard to visualize. This is somewhat analogous to the factor analysis of a complex system in that a complex system will produce more factors and would be considered multidimensionally complex. When researchers name factors, they are interpreting the data. At this point in time it does not appear that this conceptualization has been applied to strange attractors.

Chaos theory and education

Human behavior is multidimensionally complex, and the application of chaos theory to this area of study needs to be carefully conceptualized. Perhaps the most immediate application of chaos research in education is the study of individual brain function. The research previously cited focused primarily on the nervous systems's transition to abnormal conditions. There is also research being conducted which attempts to understand the brain as it functions under normal conditions.

Christine Skarda (Ecole Polytechnique in Paris) and Walter Freeman (UCLA) have studied phase space diagrams of EEG activity from the olfactory bulbs of rabbits in order to understand learning and memory. They found that the normal, alert state of the brain was chaotic. After initial introduction to a particular odor, subsequent reintroduction would momentarily decrease the chaos. They were also able to identify unique patterns for each type of odor. These patterns changed from rabbit to rabbit, but remained consistent within rabbit (Skarda & Freeman, 1987). Freeman and Bob van Dijk subsequently reported similar results in EEG-based phase space diagrams from the visual cortex of monkeys (cited in Pool, 1989c). Paul Rapp at the Medical College of Pennsylvania has focused on categorizing the fractal dimensions of the human brain while his subjects completed various mental tasks. He found that mental activity increases the amount of chaos present (Rapp, 1987).

As research in this area progresses, it is highly probable that it will produce information about how people learn. While many educational researchers may not have the resources to carry out these types of studies, there is little doubt that an understanding of the physiology of learning has heuristic potential for education.

Practical uses of chaos theory in behavioral research

Chaos theory has fascinating philosophical and methodological implications. However, the pragmatic aspects of chaos theory related to psychological or educational research need to be carefully considered. Some psychologists believe that chaos theory can be used to explain and predict personality (DeAngelis, 1993). Arnold Mandell of the University of California believes that he might be closing in on a strange attractor which represents the "personality" of an individual. He believes that data from the firing rate of dopamine receptors, serotonin receptors, and single cells in EEG activity will show the same strange attractor for any given individual (cited in Briggs & Peat, 1989). The conceptual leap from the firing rates of neurotransmitters to specific human behavior is a large one.

Chaos theory has also been used to generate models of brain functioning. Matte Bergstrom of the University of Helsinki, Finland refers to his model as a "bipolar generator" and divides the brain into an information end and a random or chaos end. He believed that the interaction of these ends produces thought and behavior (cited in Briggs & Peat, 1989).

Though chaos theory presents useful concepts for understanding human behavior, operationalizing these concepts is not easy. Explanation and prediction of complex, chaotic systems are derived from the plotting of that system's behavior. Our previous discussion explained the complexity of plotting systems with 3 or 4 variables. Plots of fairly simple psychological variables are multidimensional. The strange attractor of an EEG for a person in deep sleep has a fractal dimension of almost 4 and requires 5 dimensions in phase space to be plotted accurately (Pool, 1989c).

Accurate measurement seems to be a problem as shown by the seeming inconsistencies in research reporting on the fractal dimensions of EEG's. EEG dimensions vary depending on the activity or state of the person being measured. Values have been reported ranging from 2 to 4 fractal dimensions for such activities or states as deep sleep, mental arithmatic, and epileptic attacks. One researcher was unable to calculate the EEG dimension for a person awake because of its complexity, yet another researcher calculated values of 2.3 to 2.9 for waking EEG activity. Whether due to measurement errors or inconsistent methodologies, these problems reveal the difficulties in plotting and interpreting chaotic behavior.

Plotting personality would be even more complex. If one accepts that the minimum number of factors needed to describe personality is 16 (Cattell, 1965), then one would need 17 dimensions to plot it. The plotting of personality in phase space may be possible, but interpretation would be extremely difficult if not impossible. Additional family system and ecological variables would be necessary to go beyond personality to families and other social systems. Plotting all these variables using chaotic methodology is virtually impossible to comprehend. Yet people talk about using chaos theory in clinical pyschology as a means to understand a person's mental state and to suggest appropriate intervention. The philosophical implications of chaos theory have been misapplied in practical terms. If this practice continues, we may have a powerful technique that will lose credibility because of its misapplication.

As professionals, we should be committed to supporting the investigation or our subject matter with the most appropriate scientific tools. Current research methods may oversimplify our complex content area. Chaos theory presents an approach that may be more appropriate in theoretical terms, yet its practical application is difficult. We have an obligation to our profession to investigate the potential applicability and usefulness of chaos theory for understanding human behavior. It is hoped that such endeavors will serve our professional growth and add to the knowledge base of our profession while facilitating our ability to more effectively serve our students and clients.

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(continued on page 6)

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OERI Calendar

May 8-10... Blue Ribbon Schools Program, National Review Meeting, Washington, DC. (Invitational) Contact: Stephen O'Brien, PIP, 219-2141.

May 13-14 .. Blue Ribbon Schools Program, Recognition Ceremony for 1991-92 Elementary Schools, Washington, DC. (Invitational). Contact: Stephen O'Brien, PIP, 219-2141

May 14 .... National Assessment of Vocational Education, Advisory Panel Meeting, Washington, DC. Contact: Henrietta Moody, OR, 219-1982.

May 18 .... SMETE/Minorities Working Group, Monthly Meeting., Washington, DC. Contact: Henrietta Moody, OR, 219-1982.

May 19 .... Memorandum of Understanding (ED/NSF), Monthly Meeting, Washington, DC. Contact: Henrietta Moody, OR, 219-1982.

May 21 .... Applications due for NON Dissemination Processes, Grants Program (CFDA #87.073E). Tentative Award Date: 8/20/93. Contact: Helen O'Leary, PIP, 219-2139.

May 21..... Department of Education's Steering Committee on Mathematics and Science Education Monthly Meeting, Washington, DC. Contact: Henrietta Moody, OR, 219-1982.

May 21 .... FCCEST/CEHR Meeting, Washington, DC. Contact: Henrietta Moody, OR, 219-1982.

May 21-22 .. National Educational R&D Centers Communications & Dissemination Meeting, Los Angeles, CA. Contact: David Sweet, OR, 219-1748.

May 22 .... Education Research Centers Communicators Meeting sponsored by the National Center for Research on Evaluation, Standards, and Student Testing, Los Angeles, CA. Contact: Joseph Conaty, OR, 219-2079.

June 10-11 Advisory Council on Education Statistics Quarterly Meeting, 555 New Jersey Avenue NW, Room 326, Washington, DC. Contact: Suellen Mauchamer, NCES, 219-1828.

The Relationship of Test Anxiety and Self-Concept to Patterns of High School Students' Achievement

By Janice E. Williams, Oklahoma State University

Abstract

The present study assessed the influence of test anxiety and self-concept, both independently and in combination, upon student test performance across four different subject matter areas. Public high school students (N=217) were administered an ACT assessment, a test anxiety inventory, and a self-concept measure. The results indicated that test anxiety and self-concept contributed independently and approximately equally to student academic achievement. In addition, student performance was uniformly affected by test anxiety and self-concept across all four content sub-areas. The results of this study strongly suggested the desirability of reducing anxiety and improving self-concept, since they accounted for unique variance in predicting achievement.

Test anxiety and self-concept have been identified as major variables impacting academic achievement (see Tryon, 1098; Byrne, 1986). Hembree (1988) has indicated that test anxiety, which interferes with performance, is inversely related to self-esteem. Two major issues, however, remain unresolved. The first of these issues involves whether or not these two affective variables are related or independent in their influence upon student achievement. The second issue involves whether or not test anxiety and self-concept differentially influence achievement in various sub-areas of student study (e.g., English, science).

Although the literature generally supports the association between self-concept and achievement, and test anxiety and achievement, research focusing upon the relative influence of self-concept and test anxiety upon achievement has produced indeterminant findings. Several investigations have indicated that self-concept and test anxiety may influence achievement in conjunction. For example, Deffenbacher (1978) and Sarason and Stoops (1978) have indicated that negative self-statements (i.e., low self-concept) may be as critical as anxiety in influencing school achievement. High anxious students have been reported to produce more negative self-statements, which in turn influences academic achievement (Hammermaster, 1989).

On the other hand. Galassi, Frierson and Sharer (1981) found that there was no correlation between the negative self-statements for either high or low anxious persons and their test performance. It has been suggested that the negative thoughts of high anxious students tend to focus upon the testing situation itself rather than upon themselves, (see Wine, 1980). Others (e.g., Bruch, Juster & Kaflowitz, 1983) have indicated that neither the focus of students' self-statements nor their anxiety reactions contributed to test performance. More recently, Williams (1991) has indicated that although test anxiety and self-concept are correlated with adolescent achievement, their contributions were independent.

A second area of controversy in linking self-concept and test anxiety concerns whether or not test anxiety and self-concept contribute in the same manner to different areas of student achievement. Establishing such patterns of achievement requires the measurement of achievement across different subject or content areas. Review articles indicate that most of the past research relating test anxiety to achievement (see Hembree, 1988) and self-concept to achievement (see West, Fish & Stevens, 1980) has typically either used a single, global measure of achievement or multiple measures of achievement analyzed separately. Many of the studies that have compared achievement across subject areas with differences in test anxiety have yielded mixed results. For example, Crocker, Schmitt and Tang (1988) studied the association between test anxiety and academic performance across five different subject areas. They reported similar negative anxiety—achievement relationships across all five content areas. Betz (1978), on the other hand, has cited differences between the impact of student anxiety levels upon student verbal and quantitative performance.

Many investigators have focused upon the anxiety levels associated with the quantitative subject areas. Test anxiety and mathematics anxiety have been reported to be functionally related (see Hendel & Davis, 1978; Rounds & Hendel, 1980), and related in terms of similarity of components (see Wigfield & Meece, 1988). Thus if mathematics anxiety is one component of test anxiety, test anxiety might differentially impact student performance depending upon the area of achievement that is assessed.

Similarly, different components of self-concept might also differentially impact student achievement. Byrne (1988) has indicated that the relationship between adolescent achievement and self-concept is clearly dependent upon the particular self-concept facet in question. Current measures of self-concept have focused upon the measurement of specific components (see Byrne & Shavelson, 1986). In the popular Shavelson et. al (1976) model, self-concept is heirarchically ordered, with general self-concept at the apex, moving to self-concept in academic and nonacademic areas, leading to specific sub-areas of self-concept (e.g. English, mathematics, science, physical appearance, peers), and finally to perceptions of behavior at the base. Although Noble and McNabb

(continued on page 8)

(1988) have reported that motivational and other affective variables have been significantly related to student achievement scores, researchers seeking to uncover patterns of student achievement across different self-concept levels have typically used the academic self-concept sub-areas. For example, mathematics achievement has been reported to be highly correlated with mathematics self-concept, and less correlated with self-concept in other academic areas (see Marsh, Relich & Smith, 1983). More recently, Marsh (1990) has stated that mathematics and English self-concepts were uncorrelated, despite a significant correlation between achievement in these two areas.

If self-concept becomes increasingly multifaceted from infancy on (Marsh & Shavelson, 1985), with the facets increasingly interdependent (Marsh & O'Neil and Marsh et al., 1984), then corresponding studies into the relatively unexplored components of nonacademic self-concept appear to be warranted.

Purpose of the Study

The purpose of this study was to answer the following research questions:

(1) Does test anxiety and self-concept account for a significant amount of unique variance in high school students' academic achievement?

(2) Do differences in test anxiety and self-concept result in different achievement patterns across four separate content areas?

(3) Is there an interaction effect of test anxiety and self-concept upon student academic achievement?

The secondary goals of the study were to determine whether differences in self-concept, test anxiety, and achievement existed for different student groups (i.e., gender and class level).

Method

Sample

Participants in this study (N=217) were high school students attending public schools in northern Oklahoma. Approximately 38 percent of the sample were seniors, 44 percent juniors, and 18 percent "other" (e.g. freshmen, sophomores, exchange students, high school graduates, college students). Students came from urban, suburban, and rural backgrounds, and were primarily middle-class and white. About 62 percent of the sample was female (64 juniors, 46 seniors, 24 "other"), with 38 percent male (32 juniors, 37 seniors, 14 "other").

Procedure

Student data in this study were collected during nine ACT Preparation Workshops sponsored by the Education Extension Office of Oklahoma State University. Student participation was voluntary, with most students referred by school counselors and/or parents. The workshops, conducted both on-campus and at several off-campus locations around the state, consisted of a one-day program of activities to prepare students to take the ACT Assessment examination. During each workshop, students completed three self-administered questionnaires assisting their test anxiety, self-concept, and achievement level. Administration of the instruments was interspersed throughout each workshop.

It should be noted that the data in this study cannot be claimed to duplicate the results that would have been obtained if data from all high school student were collected.

Instrumentation

Achievement Measures. The ACT Assessment is a comprehensive evaluative, guidance, and placement program used by over a million students each year. The current study utilized an ACT Assessment practice test (American College Testing Program, 1989) to measure student academic achievement in four major curricular areas: English (23 items), mathematics (20 items), reading (20 items), and science (18 items). Higher student subtest scores indicated a higher measure of overall educational development.

Aiken (1985) has reported adequate internal consistency reliability coefficients for each subsection, [English (.92), mathematics (.91), reading (.88) and science (.85)]. He has also stated that a comparison of item content with item specifications for the four subtests has yielded a substantial degree of content validity.

Test Anxiety Measure. The majority of current test anxiety scales have been designed to assess the two major facets uncovered by test anxiety researchers: worry (the cognitive concerns of testing) and emotionality (physiological reactions to the testing situation). Review articles (e.g., Wine, 1980) have indicated that "worry" has been repeatedly shown to be the most important of the two anxiety components. While "emotionality" has been consistently reported to be unrelated to achievement, there has been abundant research supporting the negative effect of "worry" on achievement (see Tryon, 1980). Thus, for the current study, the "worry" component of the widely-used *Test Anxiety Inventory* (TAI) [Spielberger, 1980] provided a measure of student test anxiety.

"Worry" was measured with eight items scored along a Likert-type scale with four answer choices: (1) almost never, (2) sometimes, (3) often, and (4) almost always. Sample items included, "I freeze up on important exams" and "I seem to defeat myself while working on important tests." The minimum possible student score on this subscale was 8, with a maximum obtainable score of 32. Higher student scores indicated a greater amount of test anxiety.

Spielberger (1980) has presented both reliability and validity information for this scale. Internal consistency reliability coefficients of .88 have been reported, as well as test-retest reliabilities of .81 and .62 over two weeks and six months respectively. Correlations of the "worry" scale with six coefficients which have ranged from .44 to .79.

Self-Concept Measure. Self-concept was measured with *The Multidimensional Test of Self-Concept* (MTS) [Lathrop, 1988]. This

instrument was specifically designed to assess nonacademic self-concept, in contrast to most self-concept measures which stress global or academic self-concept. The MTS taps student self-concept in each of three areas identified as directly relevant in applied settings: sociability, competence, and dependability. Due to empirical considerations, the current study utilized only the "competence" subscale. Hudson (1988) has cited "competence" as the most influential variable in a detailed study of student nonacademic self-concept. Williams (1991) determined that "competence" was the most important self-concept predictor of global student academic achievement.

Self-concept was measured with six items which assessed student perception of current competence. (e.g., "Alert—Unalert," "Inexpert—Expert," "Informed—Uniformed") was scaled along a seven-point graphic rating scale, with half of the items reverse-scored. The possible range of student scores on this instrument was from 6 to 42, with higher scores indicating higher nonacademic self-concept.

Lathrop (1987; 1988) has provided support for both the reliability and validity of this nonacademic self-concept subscale. Reliability was assessed three different ways: generalizability coefficients (.78), alpha coefficients (.73), and test-retest stability coefficients with a three-month delay (.71). Confirmatory factor analyses and correlational analyses with other established self-concept measures have been cited in support of the construct validity of this subscale.

Results

Initial Analyses. Descriptive statistics were generated across all six variables of interest: achievement (English, mathematics, reading, science), self-concept and test anxiety. These descriptive statistics are presented in Table 1. As noted there, although the standard deviations across the four achievement measures were fairly consistent (a range from 3.23 to 4.47) the mean scores varied somewhat. As one might expect, both mathematics and science scores were lowest for this sample (about 10 points each), with reading (about 13) and English (about 18) the highest.

Table 1

Descriptive Statistics for Total Student Sample (N=217)

Variable	Mean	Standard Deviation	Range
English	17.76	4.13	4-23
Mathematics	10.35	4.47	1-20
Reading	12.65	3.64	3-20
Science	9.86	3.23	3-18
Self-Concept	33.15	3.95	17-41
Test Anxiety	14.47	4.36	8-20

Group Differences. Analyses of variance were conducted to test for possible test anxiety, self-concept, and achievement differences based upon gender and class level student groupings. These analyses were conducted to determine whether the sample used in the current study exhibited the pattern of results typically reported by other researchers. For example, research has indicated that test anxiety has remained fairly consistent through high school, with higher levels of test anxiety associated with female students (see Hembree, 1988). Studies focusing on adolescent gender differences in academic self-concept have also generally reported consistent findings. Males have typically exhibited higher quantitative self-concept while females have exhibited higher verbal self-concept. At the high school level, females have tended to have higher performance levels than do males (Byrne & Shavelson, 1987). In addition, due to additional instruction, seniors might be expected to outperform juniors on achievement tests.

A 2x3-factorial analysis of variance was conducted to test for possible student differences in test anxiety. Test anxiety scores served as the dependent variable, with students nested in both gender group (male or female), and class level (junior, senior, or "other"). The second analysis was conducted in a similar manner (i.e., the same grouping variables), with student self-concept scores serving as the dependent variable. No statistically significant differences were detected in either analysis.

A third ANOVA was performed with students nested in both gender and class level, with the four student achievement subscales used as repeated measures. This analysis resulted in a statistically significant main effect for "Class level," and a significant interaction between "Gender" and "achievement." However, omega-squared values of only .01 were computed for both effects, indicating only minor practical differences. As a consequence, the student data were collapsed across gender and class groups, and the remainder of the analyses which addressed the major research questions central to this study were conducted on the full student sample.

Interaction Analyses. The analyses to answer the major research questions of this study proceeded from the specific to the general. Therefore, the issue of interaction between test anxiety and self-concept upon student achievement scores was addressed first. Four sets of model comparisons were conducted to answer the interaction question. The format of these analyses for the English subtest Achievement variable was:

Eq. 1 English = f (Test Anxiety + Self-Concept)
Eq. 2 English = f (Test Anxiety * Self-Concept + Test Anxiety × Self-Concept)

Similar analyses were conducted for the remaining three Achievement subscales. The incremental R-squared values (e.g., R^2 equation 2 minus R^2 equation 1) for the interaction terms are shown in Table 2. The associated values of *W* (Pedhazur, 1982; pp. 618-620) are also shown in Table 2. These *W* values test the significance of the difference between the two prediction equations for each achievement variable. As noted there, the p-values associated with

(continued on page 10)

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Table 2

Incremental R^2 Values Associated with the Text Anxiety × Self-Concept Interaction

Dependent Variable	R-Squared	Significance test for Goodness of fit W
English	.00058	.056 (p = .80)
Mathematics	.00689	.716 (p = .40)
Reading	.00062	.066 (p = .80)
Science	.00137	.141 (P = .70)

the interaction term across the four content sub-areas ranged from .40 to .80. This indicated the absence of any significant interaction effect between test anxiety and self-concept across all content areas.

Content Area Analyses. The second research question addressed in this study, the issue of pattern differences, was simplified since the interaction terms were non-significant in each of the four cases (see equation [1] page 9). The four sets of beta weights for both affective variables were examined.

In this sample self-concept was weighed more heavily in predicting math and science, while holding anxiety constant. Test anxiety was weighed more heavily in predicting English and reading while holding self-concept constant. All possible pair-wise differences between the Test Anxiety beta-weights were tested. Adjusting for multiple post-hoc comparisons (see Keppel, 1983; 153-157), none of these differences were statistically significant. Similar analyses were conducted between the four beta-weights for Self-Concept. Again, none of these differences reached a level of statistical significance.

Principal Component Analysis. Principal component scores were generated to yield a single accurate index of "student achievement." The achievement score was derived from the first factor from a principal component analysis. This analysis indicated that the first eigenvalue accounted for the majority (65.4 percent) of the variance of the entire set of scores. Relatively small and equal variance (about 12 percent) were detected in the remaining three components. The equation for the first principal component was:

$$\text{Achievement} = .833\ \text{English} + .783\ \text{Mathematics} + .805\ \text{Reading} + .813\ \text{Science}$$

It appeared, from this equation, that each of the content areas contributed about equally to the final achievement score earned by each student.

This achievement score was then regressed upon the student test anxiety and self-concept scores. The results of this analysis yielded the following standardized prediction equation:

$$z_{\text{Achievement}} = .263\, z_{TA} + .230\, z_{SC}$$

The multiple R value for this analysis was .382, with an associated F-value (d.f. = 2, 214) of 18.28; $p < .001$. The t-values (d.f. = 214) associated with the beta weights for both test anxiety and self-concept were also statistically significant ($p < .001$). It was apparent that these two affective variables accounted for a significant amount of unique variance in the prediction of student academic achievement.

Discussion

As anticipated, the results of the current study indicated that students who reported higher self-concept and lower test anxiety also had higher achievement scores across all four content sub-areas. This finding was consistent with Dweck's (1986) conclusion that test anxiety and negative self-concept had profound effects on cognitive performance. It should be noted, however, that students in the current study anticipated being college-bound or participated in the workshops at the urging of their parents and/or school counselors. In addition, the students may not have taken the "practice" achievement test seriously, and therefore their scores may not be reflective of their "true" ability. Thus, the current findings may not be totally generalizable to the actual performance level af all high school students.

The finding of no significant curricular area pattern differences related to either test anxiety or self-concept was surprising. Researchers assessing both mathematics and test anxiety have reported moderate correlations between the two constructs (see Betz, 1978), and have indicated that it is often difficult to distinguish between the two (see Wigfield & Meece, 1988). If these findings could be generalized to the current study, one would have expected a greater impact of test anxiety on the sub-areas of mathematics and science than upon English and reading. Additional research relating mathematics anxiety and its components to test anxiety appears to be warranted.

The finding of non-significant pattern differences is also in direct contrast to the conclusions of Byrne and Shavelson (1986), and Marsh and Shavelson (1985). They related curricular area achievement to specific corresponding sub-areas of academic self-concept. However, given the Self-Perception model of personality developed by Bem and Allen (1974), one may question whether or not "self-concept" was actually being measured in their studies. A question such as "How good are you in math?" would appear to be simply a veridical report based upon ample prior evidence (i.e., the scores previously obtained on mathematics tests).

Finally, the current results have indicated that test anxiety and self-concept appeared to have a ubiquitous, non-interactive effect upon all four areas of student performance assessed. The impact of such a conclusion upon programs for academic intervention is striking. The present study suggested that successful intervention programs should be oriented towards reducing feelings of test anxiety and improving perceived self-concept. For example, Wilson and Rotter (1986) studied the effects of five different treatment intervention conditions upon both test anxiety reduction

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and self-esteem enhancement. They have indicated that a counseling approach to test anxiety, with ego-strengthening suggestion and study-skills development, produced the greatest long-term effect upon changing both test-anxiety and self-esteem. It should be noted, however, that their study involved only individuals classified as "high test anxious." The present study would appear to extend their conclusion, in that student test anxiety and self-concept scores were not artifically categorized but were permitted to vary across all values from low to high. Additional follow-up studies testing paradigms such as that proposed by Wilson and Rotter should be conducted using all the information provided by continuously-scaled affective measures.

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MWERA Communication & Update

MWERA Needs Your Help

Session chairs, discussants, and reviewers are needed to make the conference a success. Many of you may have an interest in serving MWERA in this way and the organization welcomes the widest diversity of involvement possible. Let me encourage you to submit your name to the appropriate division chair listed in the *Call for Proposals* or directly to me. In submitting your name, let the division chair or me know: (1) Your name, (2) institution, (3) title, (4) address, (5) day and evening phone numbers, (6) fax number, (7) EMAIL address, and (8) your area of expertise, (9) the division you most align yourself with, and (10) what you would prefer to do to serve MWERA. See you in October!

—Thomas Andre, 1993 Program Chair

New Editorial Board Member

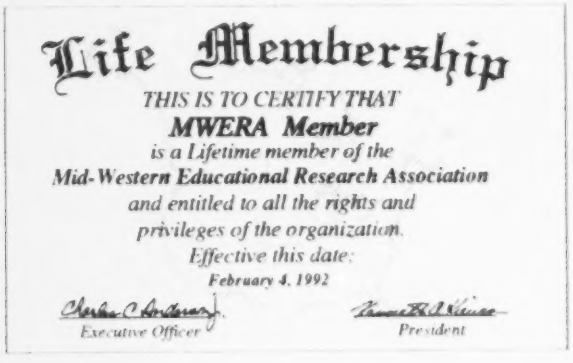
The Mid-Western Educational Researcher welcomes Steven Jurs to its Editorial Advisory Board and appreciates the expertise and direction he will be providing to the journal.

MWERA History

The Mid-Western Educational Research Association is considering the development of a written history of the organization. If you are interested in working on this project, then contact President Ken Kiewra, University of Nebraska, 1307 Seaton Hall, Lincoln, NE 68588-0641, (402) 472-3233.

MATEP Call for Papers

The annual meeting of the Midwest Association of Teachers of Educational Psychology (MATEP) will be held October 1 and 2 at Anderson University in Anderson, Indiana (30 miles northeast of Indianapolis). This year's theme is "Quality in Education: The Roles and Methods of Teachers of Educational Psychology." Those wishing to participate should send four (4) copies of a one-page single-spaced proposal relating to topics on instruction, learning, and applied practice. Two copies of the proposal should contain the presenter's name and affiliation; the other two should not. A cover letter should accompany the proposal describing the preferred format (most presentations will be paper sessions, however, a few roundtables/poster sessions may be scheduled). Alternative formats such as panels, symposia, or workshops are welcome. In addition, please note your willingness to serve as a session chair. Those who are willing to serve as a session chair, but are not presenting, should contact one of the co-chairs, Greg Marchant or Linda Chiang. Proposals should be sent by *June 15* to: Greg Marchant, MATEP Proposal, Educational Psychology, Ball State University, Muncie, IN 47306.



Life Membership

THIS IS TO CERTIFY THAT

MWERA Member

is a Lifetime member of the

Mid-Western Educational Research Association

and entitled to all the rights and privileges of the organization.

Effective this date:

February 4, 1992

Executive Officer *President*

MWERA Life Members (as of 1993/03/09)	Institution	LM
Dennis W. Leitner	Southern Illinois University	1991/01/28
Ayres G. D'Costa	The Ohio State University	1991/10/18
Kenneth A. Kiewra	University of Nebraska-Lincoln	1992/02/04
Adria Karle-Weiss	University of South Florida	1992/10/15
Jack K. Barshinger	DeKalb Schools	1993/02/02
Orpha K. Duell	Wichita State University	1993/02/04
Richard C. Smith	Roosevelt University	1993/02/25
Corenna C. Cummings	Northern Illinois University	1993/03/02

A *Life Membership* is open to all members of MWERA for the sum of $180. If you have already paid your 1993 dues, we will apply that toward the total.

Member-At-Large Report to the Membership: The 1992 Annual Meeting

By Sharon McNeely, Northeastern Illinois University

The Member-at-Large to the Executive Committee is charged with membership recruitment and with evaluating the annual conference. This year we have seen a small growth in new memberships, but a decrease in renewals of memberships, with the end result being that at the start of 1993, we have less paid members than in 1992. While the Association Council and I are charged with building membership, this is a task which really falls into the hands of all members. If you like being a member of MWERA, one of your colleagues, students, teachers, etc., may like it also. Please pass along membership information to them.

Attendance at the 1992 Annual Meeting was about the same at it has been for the past two years. We can easily increase the attendance and not outgrow the Bismarck. I hope you will think about encouraging your colleagues to attend in 1993.

Most of the 1992 Annual Meeting's sessions were evaluated this year. The evaluations provided valuable data for planning next year's conference and for generally improving our meetings. The number one concern across the sessions was to have screens for the overheads. This next year we will attempt to do so. Currently, we are very fortunate that the Bismarck lets us bring in equipment. Most hotels require that you rent it from them. We save several hundred dollars per day by bringing in overhead projectors, etc., in addition to what we save because we do not pay room rental. While those of us who work on the convention preparation will try to meet presenters' needs, we also want to encourage you to think about bringing needed materials with you, and planning your presentations accordingly.

There were also a number of evaluations which commented that presenters did not have prepared papers for distribution to the audience. Some presenters did not get their papers to the discussants prior to the program. As you prepare your proposals for the May 15, 1993, deadline, please keep in mind that if you present, you will need to have copies of your complete paper available to your audience.

The evaluation results also showed concern for the poor attendance at some sessions. The program chairs always need to try to balance the number of sessions, acceptance of papers, and attendance. From the session evaluations, it seems that some of the workshops, and some of the sessions, especially those scheduled for early Thursday, late Friday, and Saturday morning may have been lacking audiences. If you have any ideas for increasing audience size, let me know. In the meantime, please consider how important it is for you to have an audience when you present, and make it a point to be an audience member for others.

Our organization and our annual meeting have seen a huge growth in the few years we have been organized. As a result, we are experiencing some of the problems that come with growth. The session evaluations brought up some ethical concerns which we all need to consider. For instance, presenters, chairs, and discussants all have responsibilities. If they are absent from their sessions, they need to make arrangements with the Program Chair regarding appropriate coverage. Also, sessions are for the presentation of educational research. The selling of products, presentation of political platforms, and other such items is inappropriate. All of us who have been involved in MWERA, AERA, etc., need to help mentor newcomers as to what is expected of their participation.

Richard Pugh did a fantastic job as the 1992 Program Chair. The Invited Speakers presentations by Thomas Good and Mary McCaslin, and the Presidential Address by Barbara Plake were rated very highly. It seems like our return to a Presidential Address was successful.

The 1993 Program Chair is Thomas Andre. He is already hard at work, and has made some decisions regarding the meeting. Logistically, we have agreed to again furnish overhead projectors, and to try to furnish screens. We will use Blackhawk Room as a "social and convention related" room, where local attendees can keep their coats, those who typically gather in the hallway after a session can continue their talk without disturbing other presentations, presenters can practice, etc. Also, we will again have an Exhibits Area for one day. This year it will be staffed full-time to hopefully avoid the unfortunate situation we had last year when a display book was taken. As Exhibits Chair, I want to thank the membership for their cooperation regarding this incident. I also hope you will let me know any particular publishers you would like to see at this year's convention.

In addition to the program logistics, the 1993 program will experiment with alternative session formats, such as posters, roundtable discussions, etc. This will give us a chance to develop other formats and to explore more topics than we can cover in regular sessions. I hope that when you pass along copies of the call for proposals to colleagues you let them know that the program will not be limited to the standard presentation format.

If there is anything else I can help you with regarding your membership in MWERA, please let me know. I will look forward to seeing you at the annual meeting.

347

Call For Proposals

Mid-Western Educational Research Association

1993 Annual Meeting

October 13-16, 1993 -- Chicago, Illinois -- Bismarck Hotel

Proposal Due Date -- Postmarked May 15, 1993

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MWERA 1993 Annual Meeting--Oct. 13-16, 1993

Please consider this *Call for Proposals* a personal invitation to participate in the 1993 Annual Meeting of MWERA. To encourage you to submit a proposal, let me tell you about some of the exciting events that will occur at the convention. **Dr. John Bransford,** will present an ***MWERA Invited Address*** on **Macro-contexts for Problem-Based Learning: Design Principles for Enhancing Learning and Transfer,** on Wednesday Oct. 13, 1993. **Dr. Bransford** also will present the ***MWERA Keynote Address*, Research on Macrocontexts for problem-Based Learning**, on Thursday Oct. 14. On Friday,. Oct. 15, 1993, **Dr. Jere Brophy**, Michigan State University, will present the ***MWERA Luncheon Address*, Trends on Research on Teaching**, and **Dr. Ken Kiewra**, University of Nebraska, will present the ***Presidential Address***. On Friday afternoon, **Dr. Frank Baker,** University of Wisconsin, will give a ***Division D Invited Address*** on **Equating Tests Under Item Response Theory**.

The conference will include paper sessions, symposia, and workshops. A highlight this year is the emphasis on alternative sessions and the use of poster sessions. A graduate student workshop on finding and surviving the first position will be held on Friday. ***Exhibits*** will be available for your perusal on Friday as well.

The MWERA meeting is for **You**! Your fellow members want to know about **your** research and **your** insights into the process of education. Collectively, we need **your** help to make this conference a success. Please develop a proposal and encourage your colleagues to do so. Encourage your graduate students to attend and participate. **You are the best form of advertising that MWERA has!** We need you to pass the word about how wonderful the MWERA conference is. With your participation, we can make the 1993 Conference as big a success as previous meetings have been.

Thomas Andre, 1993 Program Chair

Call for Proposals -- Due May 15, 1993

Conference Highlights

Wednesday, October 13
- Training Workshops
- Featured Presentation 8-9 PM
- Speaker: **John Bransford**
- Topic: **Macro-contexts for Problem-Based Learning: Design Principles for Enhancing Learning and Transfer**

Thursday, October 14
- Keynote Address
- Speaker: **John Bransford**
- Topic: **Research on Macrocontexts for Problem-Based Learning**
- Division Discussion Meetings
- Evening Social, 6-8 PM

Friday, October 15

Presidential Address
- Speaker: **Ken Kiewra**
- Business Meeting
- Luncheon
- Luncheon Address
- Speaker: **Jere Brophy**
- Topic: **Trends in Research in Teaching**
- Exhibits
- President's Reception, Bismarck Regency Suite, 9 PM

Saturday, October 16
- Fun Run
- Paper and Symposium Sessions Scheduled until noon.

General Information

A. Proposals may be in the form of alternative sessions, symposia, scholarly papers/posters. Participants are encouraged to develop proposals that best communicate their research and theoretical ideas and/or provide for scholarly debate about research and theoretical issues. MWERA sessions are designed to promote communication about education and educational research. It is contrary to MWERA policy to present sessions that promote a commercially available product or service (except for Exhibits) or that go beyond the limits of appropriate scholarly/scientific communication. Individuals interested in displaying educationally related products or services should contact Sharon McNeely, PO. Box 34421, Chicago, IL 60634. 312-794-2788.

Deadline: All proposals must be postmarked no later than May 15, 1993. All proposals will be peer reviewed.

B. Any educational researcher, whether MWERA member or not, may submit a proposal. **NON MEMBERS WHOSE PROPOSALS ARE ACCEPTED MUST JOIN MWERA UPON NOTIFICATION OF AN ACCEPTED PROPOSAL.**

C. MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals. Unless expressly prohibited in writing by the author(s), summaries may also be made available to the press or other interested parties upon request. Such limited distribution does not, of course, preclude subsequent publication of a summary or complete paper by the author(s). Authors are encouraged to consider publication in the *Mid-Western Educational Researcher*.

D. All persons attending the Annual Meeting, including participants, are required to register for this meeting and to be members of MWERA. All sessions listed in the program will be open to anyone registered for the meeting. A fee will be charged and enrollment may be limited for Workshops. Materials for registering for the Annual Meeting will be published in the *Mid-Western Educational Researcher*.

E. Participants in paper sessions, symposia, and alternative sessions must distribute handouts to attendees at their sessions. This handout should include as complete a copy of the paper or a summary of the symposium talk or alternative presentation as possible.

F. Participants are responsible for submitting their written paper or summary to the Session Chair, Discussant, Divisional Program Chair and Program Chair one month prior to the Conference (Sep. 13, 1993). Failure to do so may lead to elimination of the paper from the program.

G. Papers may also be submitted to ERIC for distribution to the profession. This does not preclude publication in a journal. ERIC forms will be available at the Conference Registration Desk.

H. Some papers will be accepted as poster sessions. Proposers will have the opportunity to indicate a preference for poster sessions or traditional paper sessions, but the program committee will make the final decision. **Proposers whose papers are accepted for paper sessions will be responsible for producing appropriate poster materials.**

I. We attempt have overhead projectors available in every meeting room for use by presenters. **No other AV equipment will be provided by MWERA. If special AV equipment is needed, participants are**

responsible for providing such equipment at the participant's expense.

J. **Submission of a proposal entails an ethical responsibility on the part of the proposer to present the paper, symposium, or alternative session if it is accepted.** If a proposer becomes unable to present an accepted proposal, it is the responsibility of the proposer to arrange for some alternative means of distributing the paper and to notify the Program Chair in advance.

Guidelines for Alternative Session Proposals

A. General Information about Alternative Session Proposals

Alternative session proposals are designed to explore alternative ways of presenting and communicating scientific information. They are limited only by your creativity and the requirements to fit within the time guidelines for MWERA sessions and to not entail any additional expense to MWERA. As suggested by AERA, experimental formats do not necessarily have to be radical. A single paper presented with several discussants whose function it is to lead small group discussions would be considered experimental. A Panel Discussion format in which four or five scholars each give a short (e.g. 5 minute) position statement on a noteworthy or controversial issue and then a discussion between the panelists and audience ensues would also be considered experimental. A debate between proponents of alternative views on a controversial issue might provide another example. A media-driven session would be another example. Let your creativity be free!

B. Material to Submit with an Alternative Session Proposal

1. **Alternative Session Proposal Cover Sheet**. (see enclosed). Six copies with all applicable items completed.
2. ***Summary***. Six copies of a 2-3 page single spaced summary for use in judging the merits of the session. Three copies of the summary should include the name(s) and institutional affiliations of the organizer, session chair, participants or authors, and discussants (or other individuals who may participate in the alternative session). Three copies should omit that information unless the identity of the participants is a critical component in evaluating the value of the proposal. Panel Discussions and other proposals in which the names and reputations of the participants are part of the value of the proposal should include the names on all six copies. Proposals that use an alternative format to describe the results of an empirical investigation should provide for blind review. Proposers should use their best judgment in this regard. Describe the nature and format of the alternative session. If there are invited participants, indicate who they are and what their roles and contributions will be. Summarize the content to be presented or discussed in the session. Make clear the scientific/scholarly value of the session and the theoretical and empirical issues addressed. Make clear how the session represents an alternative to traditional paper/poster and symposium sessions. Examine the guidelines for paper & symposium proposals and describe as many of the types of information presented there as are relevant and applicable to your proposal. Remember the reviewers must evaluate both the worth of the content and the format. Make sure you communicate these clearly!
3. ***Abstract*** (6 copies: as appropriate, 3 with the name(s) and institutional affiliation(s) of the author(s)/participant(s), three without the name(s) and institutional affiliation(s). A 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the Summary guidelines. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. An abstract longer than 150 words will not be published. Include a word count at the end of the abstract. On the copies including the name(s) include the following information typed at the top left margin of the page: Title of Paper, Author(s), Institutional affiliation(s).
4. ***Envelopes***. Five stamped self addressed business-sized envelopes for (1) acknowledgment of the receipt of the proposal, (2) notification of the decision of the program committee, (3) notification of the scheduled session time, (4) a reminder to submit the paper to the discussant, session chair, divisional program chair, annual meeting program chair, and (5) notification of receipt of the paper.
5. ***Index Cards***. (three, 3x5 index cards). These should contain: *Title of Alternative Session, Name of Organizer/Proposer, Institutional Affiliation, Complete Address with ZIP Code, Business Telephone Number with Area Code, Evening Telephone Number with Area Code, FAX Telephone Number, EMAIL Address*
6. ***List***. Three copies (8.5x11) of a list of all author(s)/participant(s), including names, institutional affiliations(s), complete address(es), day and evening telephone number(s), FAX number(s), EMAIL address(s).

B. Guidelines for Paper Proposal

A. General Information About Paper Proposals

1. Only papers not previously presented or published are eligible.
2. Papers may be presented as oral communications describing empirical research or as poster sessions. The proposer may indicate a preference for a poster or oral communication session. The Program Committee reserves the right to place papers into either poster or oral communication sessions in order to best meet the needs of the program.
3. The Program Committee will group papers into sessions organized by topics of interest to the conference. The Program Committee may, at its discretion, include a discussant to critique the papers in any particular paper session. Those presenters assigned a discussant are to provide a copy of the paper to the discussant one month prior to the meeting.
4. Generally, papers will be allotted no more than 15 minutes per presentation. It will be the responsibility of the Session Chair to consult with the presenters, allocate time and ensure that the agreed schedule is followed.
5. It is the responsibility of the authors of an accepted proposal to appear at the Annual Meeting to present the paper. If unforeseen circumstances arise that prevent an author from presenting a paper, it is his/her responsibility to arrange for a suitable substitute to make the presentation, discuss the arrangements with the Session Chair, and inform the Divisional Chair and Annual Meeting Program Chair.

B. Material to be Submitted with a Paper Proposal

1. ***Paper Proposal Cover Sheet*** (6 copies). See attached form.
2. ***Summary*** (6 copies of a 2-3 page summary typed single spaced on 8.5X11 paper with one inch margins in no smaller than 10 point type.) It should contain as many of the following sections as applicable. Three copies of the summary should include the name(s) and institutional affiliations of the author(s). Three copies should omit that information.
   a. *Title of Paper.*
   b. *Names of Author(s)-on 3 copies only.*
   c. *Institutional Affiliation of Author(s)-on 3 copies only.*
   d. *Objectives.*
   e. *Perspectives or theoretical framework (brief literature review).*
   f. *Methods: instruments, techniques, procedures.*
   g. *Data Source.*
   h. *Results, conclusions, or point of view.*
   i. *Educational/scientific importance of the study.*
3. ***Abstract*** (6 copies: 3 with the name(s) and institutional affiliation(s) of the author(s), three without the name(s) and institutional affiliation(s).) A 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the Summary guidelines. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. An abstract longer than 150 words will not be published. Include a word count at the end of the abstract. On the three copies including the name(s) include the following information typed at the top left margin of the page: Title of Paper, Author(s), Institutional affiliation(s).
4. ***Envelopes*** (5 self-addressed, stamped, business-sized envelopes). These will be used to inform you of (1) the receipt of the proposal, (2) the reviewer's decisions, (3) the scheduled session time, (4) a reminder to forward the paper to the Session Chair, Discussant, Divisional Chair, and Annual Meeting Program Chair, (5) the receipt of the complete paper.
5. ***Index Cards*** (three, 3x5 index cards). These should contain: Title of Paper, Name of Presenting Author, Institutional Affiliation, Complete

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Address with ZIP Code, Business Telephone Number with Area Code, Evening Telephone Number with Area Code, FAX Telephone Number, EMAIL Address.

6. ***List.*** Three copies (8.5x11) of a list of all author(s), including names, institutional affiliations(s), complete address(es), day and evening telephone number(s), FAX number(s), EMAIL address(s).

Guidelines for Symposium Proposals

A. General Information About Symposium Proposals. A symposium is intended to provide an opportunity for examination of a specific problem or topic from a variety of perspectives. A symposium should provide for the presentation of alternative solutions or interpretations either of a common problem or in relation to a complementary theme. This purpose is best served when individuals with diverse or conflicting views are allowed to interact on a topic of sufficient scope and importance. It should be noted that a symposium should not be merely a presentation of a set of related papers. Although such complementary papers are clearly worthwhile, they should be submitted as individual papers with an indication of suggested grouping on the Cover Sheet. Symposia should allow time for discussion between the presenters and the audience. It is recommended that there be no more than 4 presenters at a symposium.

B. Responsibility of Organizers of Symposium. It is the responsibility of the ***Organizer*** to select the topic and to solicit speakers and discussants. Organizers of symposia must have the consent of all participants before submitting the proposal. Organizers not wishing to chair the session must invite chairpersons. The organizer of a symposium is responsible for ascertaining that each person named as a participant will be present at the meeting if the session is accepted. Should unforeseen circumstances prevent a participant from attending, it is the responsibility of the organizer to find a suitable replacement and notify all other participants in the session as well as the Divisional Chair and Annual Meeting Program Chair. **Participants in a Symposium must submit a summary of their remarks to the discussant(s), the other participants, the Symposium Chair, the Divisional Chair, and the Annual Meeting Program Chair one month prior to the convention (Sep. 13, 1993).** Only the organizer will be notified of the acceptance of a symposium; he/she is responsible for notifying the other participants in the Symposium.

C. Materials to be submitted with a Symposium Proposal.

1. ***Symposium Proposal Cover Sheet*** (6 copies). See attached form.
2. ***Summary*** (6 copies of a summary typed single spaced on 8.5x11 paper with one inch margins in no smaller than 10 point type.)
   - *a. Title of Symposium.*
   - *b. Names of Organizers*
   - *c. Institutional Affiliation of Organizer.*
   - *d. Name of Chair*
   - *e. Institutional Affiliation of Chair*
   - *f. Names of Participants*
   - *g. Institutional Affiliation of Participants*
   - *h. Summary of Symposium* including: (1) Overview. An 300 word overview of the symposium including: topic, objectives, approaches, planned format, (2) 300 word summaries of each of the symposium presenters presentations including titles.
3. ***Abstract*** 6 copies with the name(s) and institutional affiliation(s) of the author(s). A 300-400 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the Summary guidelines. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. An abstract longer than 400 words will not be published. Include a word count at the end of the abstract. Include the following information typed at the top left margin of the page: Title of Symposium, Organizer, Chair, Presenters, Discussants, Institutional affiliation(s) of each.
4. ***Envelopes*** (3 self-addressed, stamped, business-sized envelopes). These will be used to inform you of (1) the receipt of the proposal, (2) the reviewer's decisions, (3) the scheduled session time, (4) a reminder to forward the Symposium to the Session Chair, Discussant, Divisional Chair, and Annual Meeting Program Chair, (5) the receipt of the complete Symposium papers.
5. ***Index Cards*** (three, 3x5 index cards). These should contain: *Title of Symposium, Name of Organizer, Institutional Affiliation, Complete Address with ZIP Code, Business Telephone Number with Area Code, Evening Telephone Number with Area Code, FAX Telephone Number, EMAIL Address.*
6. ***List.*** Three copies (8.5x11) of a list of organizer, chair, all presenters, including names, institutional affiliations(s), complete address(es), day and evening telephone number(s), FAX number(s), EMAIL address(s).

Guidelines for Workshop Proposals

A. General Information About Workshop Proposals. Workshop topics should be of interest and use to a number of MWERA members. Presenters will receive an honorarium based on the number of participants attending the workshop. All persons listed as presenters are required to appear at the conference and present the workshop at the designated time. All workshops will be on Wednesday, October 13, 1993, either starting at noon or 3:30 p.m. Some workshops may be offered twice.

B. Materials to be submitted with a Training Workshop Proposal

1. **Cover Sheet** (Use Symposium Proposal Cover Sheet. See attached form.) Send two copies with all items complete. Strike out the word "Symposium" and write in "Workshop." Indicate the total amount of time you believe will be needed. Please note that in special circumstances a workshop may be allocated more than three hours.
2. **Summary** (3 copies of a 2–3 page summary typed single-spaced on 8½ x 11 paper). This will be used to judge the proposal. The summary should include information such as the following.
   - a. Objectives (knowledge, skills for participants)
   - b. Suggested entry-level skills for participants
   - c. Educational or scientific importance of the topic
   - d. Perspectives, orientations, or theoretical framework
   - e. Methods or techniques of instruction
   - f. Description of presenter's relevant experience
3. **Abstract** (3 copies). A 100–200 word, narrative Abstract should be prepared for publication in the Annual Meeting Abstracts. This should briefly describe the objectives, content, and methods of the workshop. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. Abstracts should be typed single-spaced on 8½ x 11 paper. An abstract longer than 200 words will not be published. For all copies of the abstract, the title of the workshop, the presenter(s), and their institutional affiliation(s) should be typed at the top left margin, in the format below:
4. **Title of Workshop**
5. **Presenters, Institutional affiliation**
6. **Envelopes** (3 self-addressed, stamped, business-size envelopes). These will be used to inform you of (1)receipt of the proposal, (2) the reviewers' decision, and (3) the scheduled session time.
7. **Index Cards** (three, 3 x 5 index cards). These should be prepared as follows:
   - *a. Title of Workshop*
   - *b. Name(s) of Workshop presenters (last name first), identify contact person*
   - *c. Institutional affiliation*
   - *d. Complete address (with zip code) of contact person.*
   - *e. Telephone number (with area code) of contact person*
6. **Mail Workshop Proposal to 1993 Workshop Training Coordinator: Dr. Gary D. Phye**, Department of Psychology W112 Lagomarcino Hall, Iowa State University, Ames, IA 50011-3180, 515-294-1962, FAX: 515-294-6424, BITNET: S1.GDP@ISUMVS.BITNET. Proposals must be postmarked first-class by **May 15, 1993**.

MWERA Student Research Incentive Awards

All graduate students who author or co-author an accepted proposal will receive a certificate of achievement. Up to 3 graduate students will be randomly selected from the group of graduate students who author or co-author a proposal to each receive a Research Incentive Award to be presented during the MWERA Business Meeting on

October 16. Any graduate student who has authored/co-authored a research paper, is pre-registered for the 1993 Annual Meeting, and is present at the MWERA Business Meeting will qualify for an award. The Research Incentive Award will consist of a free membership in MWERA for the coming year and free registration at the next annual convention.

Where to Submit Proposals.

Proposals should be submitted to the **Division Program Chair** listed below whose division best fits the content of the proposal. Proposals may be submitted to only one division. [However, a proposer may proposed a cross-division alternative session. In that case, the proposer must contact the chairs of the respective divisions and discuss the proposal with them prior to submitting it. If the Division Chairs believe that such a cross-divisional proposal is the best way to submitted the proposal, it should then be submitted to both divisions, with an explanatory letter. Such proposals will be reviewed by both divisions.] If a proposal does not fit any of the indicated divisions, it should be submitted to the Annual Meeting Program Chair, Thomas Andre, Department of Psychology, Iowa State University, Ames, IA, 50011-3180. Phone: 515-294-1754, FAX: 515-294-6424, EMAIL: s1.txa@isumvs.bitnet.

Proposals must be submitted in hard copy form and must be postmarked no later than May 15, 1993. Voice Phone, FAX, and EMAIL addresses are provided to give presenters alternative ways of asking questions of the Program Chairs.

DIVISION A: ADMINISTRATION

Concerned with research, theory, development, and improvement of practice in the organization and administration of education.

William L. Sharp
Dept. of Ed. Admin. & Higher Ed.
Southern Illinois University
Carbondale, IL 62901-4606
Phone: 618-536-4434

DIVISION B: CURRICULUM AND STUDIES

Concerned with curriculum and instructional practice, theory, and research.

Rose Mary Scott
Teacher Education Department
University of Wisconsin-Parkside
900 Wood Rd. Box 2000
Kenosha, WI 53141-2000
414-595-2180

DIVISION C: LEARNING AND COGNITION

Concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors.

Jennifer Fager
South Dakota State University
Wenona Hall, Box 507
Brookings, SD 57007-0095
605-688-4362

DIVISION D: MEASUREMENT AND RESEARCH METHODOLOGY

Concerned with measurement, statistical methods, and research design applied to educational research.

Robert S. Barcikowski
314C McCracken Hall
Ohio University
Athens, OH 45701
614-593-4476
EMAIL: edre@ouaccvmb

DIVISION E: COUNSELING, HUMAN DEVELOPMENT AND SPECIAL EDUCATION

Concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies.

Thomas E. Midgette
136 Graduate Education Bldg.
University of Arkansas
Fayetteville, AR 72701
501-575-3509
FAX: 501-575-4681

DIVISION F: HISTORY AND PHILOSOPHY OF EDUCATION

Concerned with the findings and methodologies of historical research in education.

Don R. Castle
384 N. Townview Circle
Mansfield, OH 44907
419-289-5351

DIVISION G: SOCIAL CONTEXT OF EDUCATION AND MOTIVATION

Concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development.

Joan S. Timm
College of Education and Human Services
University of Wisconsin-Oshkosh
Oshkosh, WI 54901
414-424-7420

DIVISION H: SCHOOL AND PROGRAM EVALUATION

Concerned with research and evaluation to improve school practice, including program planning and implementation.

Daniel Mueller
Indiana University
140 Smith Research Center
2805 E. 10th St.
Bloomington, IN 47408
812-335-0278
FAX: 812-856-8440
EMAIL: mueller@ucs.ind.edu

DIVISION I: PROFESSIONAL AND MEDICAL EDUCATION

Concerned with educational practice, research, and evaluation in the professions (e.g., medicine, nursing, public health, business, law, and engineering).

Richard M. Smith
15426 Plantation Oaks Drive, Apt. 11
Tampa, FL 33647
Evening: 813-978-8812
Day: 813-974-3220
FAX: 813-974-3826

DIVISION J: POSTSECONDARY EDUCATION

Concerned with a broad range of issues related to two-year, five-year, and graduate education.

Kim K. Metcalf
Teacher Education Laboratory
W. W. Wright Education Bldg.
Bloomington, IN 47405-1006
812-856-8159
FAX: 812-856-8440
EMAIL: kmetcalf@iubacs.bitnet
or kmetcalf@ucs.indiana.edu

DIVISION K: TEACHING AND TEACHER EDUCATION

Concerned with research on teaching, conditions of teaching, the teaching profession, and the preparation and development of teachers.

Josue' Cruz, Jr.
2037 Northtowne Ct.
Columbus, OH 43229
612-292-8030
FAX: 612-292-7695

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Special Notice: -- MWERA Hospitality Party at AERA!

MWERA will host a hospitality party for its members on *Tuesday, April, 13 1993 from 7-9 pm in the Lancaster E Room of the Hyatt Hotel - Atlanta!* Hot and cold munchies will be provided and a cash bar will be available.

Come and join your Midwestern Colleagues for an evening of gaity, conversation, and fun. Ken Kiewra may do his impression of a long distance runner; Tom Andre may show up and pretend to be an organized person. He offers to buy a drink to the person suggesting the most alternative proposal. Authentic entertainment, imbibing, and the opportunity for participant-observation eating await. Izzy Newman may even find a way to regress! *Come and have fun*!

Executive Committee

Immediate Past President
Barbara S. Plake, University of Nebraska-Lincoln

President.
Kenneth A. Kiewra, University of Nebraska-Lincoln

President-Elect
Richard C. Pugh, Indiana . Univeristy

Vice-President
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Executive Officer
Charles C. Anderson, Jr. Educational Testing Service (Ret.)

Co-Editors, Researcher (exofficio)
Gregory J. Marchant, Ball State University,
Isadore Newman, University of Akron

Association Council 1991-1993

Sonya L. Blixt, Kent State University
Alice J. Corkill, Univ. of Nevada-Las Vegas
Mary Ann Flowers, Cleveland State Univerisyt
Sarah E. Peterson, Northern Illinois University
John T. Pohlmann, Southern Illinois University
E. Jane Williams, Columbus Public Schools
Jane Ann Zaharias, Cleveland State University

Mid-Western Educational Research Association

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the mid-western region of the United States and Canada. Membership is open to faculty, students, and administrators from any setting , including university, college, and school personnel, educational researchers in business and industry, and those in national, state, local and private agencies and organizations. College students engaged in educational research are especially encouraged to join as members.

The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The Mid-Western Educational Researcher is the official publication of the Association. The four issues published annually are mailed to all members. These issues include articles, features, a report on the Annual Meeting, some of the major presentations, the Call for Proposals, and the Program for the Annual Meeting.

The Annual Meeting of the Association is held in the third week of October beginning with presessions starting on Wednesday at noon. The meeting is comprised of papers, symposia, and invited addresses concerning a variety of topics from the various MWERA Divisions. The 1993 Annual Meeting will be held at the Bismarck Hotel, Chicago, Illinois, October 13 through 16. Contact the Program Chair for more information about the Annual Meeting. Thomas Andre, (812) 855-4053, School of Education, Indiana University, Bloomington, IN 47405.

The annual dues of $18 (Regular Member) or $10 (Student) include a subscription to the Mid-Western Educational Researcher and a reduced registration fee for the Annual Meeting. Address membership correspondence to: Charles C. Anderson, Jr., (708) 564-4796, MWERA Executive Officer, 1332 Southwind Dr., Northbrook, IL 60062.

MWERA Membership Application

Name (first, m.i.,last)_____

Mailing address -_____

City_____ State_____ - Zip_____

Home phone (_____)_____ Office phone (_____)_____

Highest degree_____ Area of specialization_____

Institution/employer_____

Mwera Divisional Preferences. Check all divisions you wish to join.

__ A: Administration
__ B: Curriculum Studies
__ C: Learning & Instruction
__ D: Measurement & Research Methodology
__ E: Counseling, Human Dev, & Special Ed
__ F: History & Philosophy of Education
__ G: Social Context of Education & Motivation
__ H: School & Program Evaluation
__ I: Professional & Medical Professions
__ J: Post Secondary Education
__ K: Teaching & Teacher Education

PAPER PROPOSAL COVER SHEET--1993 MWERA Annual Meeting

Please print or type

1. Title _____

_____

2. Presenting Author _____
LAST NAME FIRST NAME MI

3. Affiliation _____ Telephone(____)_____

4. FAX: (____)_____ EMAIL _____

5. Complete address _____

_____

6. Authors. Please check here if there is more than one author for the paper. _____☐
Please attach a separate sheet listing name, institutional affiliation, complete address, day and evening telephone numbers, FAX number, and EMAIL address for each author. Include and identify the presenting author. (Please print or type this information.)

7. If you wish to have this paper grouped in the same session with other papers submitted to the Annual Meeting, please CHECK HERE and attach a separate sheet listing paper titles, presenting authors, and institutional affiliations, complete addresses, day and evening telephone numbers, FAX numbers, and EMAIL addresses. _____

8. Are you a member of MWERA? __ Yes __ No

9. Session Type Preference __ Oral Presentation __ Poster

Please note that all presenters must be current members of MWERA at time of presentation and must pay registration for the Annual Meeting.

I hereby certify that, if this paper is accepted and placed on the program, I will join MWERA if necessary, register for the Annual Meeting, appear, and deliver the paper.

_____
SIGNATURE DATE

Be certain all of the following are enclosed:

SIX SETS OF MATERIALS, STAPLED TOGETHER, EACH CONTAINING ONE OF EACH OF THE FOLLOWING:

- Paper proposal cover sheet
- Separate sheet listing all authors (See No. 3 above)
- 2–3 page Summary
- 100–200 word Abstract (to appear in the Meeting Abstracts)
- Self-addressed stamped envelope
- 3 x 5 index card with title of presentation, name of presenting author, institutional affiliation, complete address, and day telephone number, evening telphone number, FAX number, EMAIL Address.

THIS INFORMATION MUST BE POSTMARKED FIRST-CLASS BY MAY 15, 1993.

ALTERNATIVE FORMAT, WORKSHOP, OR SYMPOSIUM PROPOSAL COVER SHEET

1993 MWERA Annual Meeting

SESSION TYPE: Alt. Format ____ Workshop ____ Symposium ____

Please print or type

1. Title_____

2. Affiliation_____Telephone ( )_____

3. Complete address_____

_____

4. FAX: _____ EMAIL: _____

5. Organizer/Proposer_____
LAST NAME FIRST NAME MI

6. Chair_____
(if different from Organizer) LAST NAME FIRST NAME MI

7. Participants. Please attach a separate sheet listing name, institutional affiliation, complete address, day and evening telephone numbers FAX numbers, EMAIL addresses, and title of presentation for each participant. Include and identify the chair, discussant(s), and presenters. (Please print or type this information.)

8. Time requested: (for symposium) __ 1 hour __ 1½ hour __ 2 hours
(for workshop) __ 2 hours __ 3 hours __ 4 hours __ Other

9. Are you a member of MWERA? __ Yes __ No

Please note that **all presenters** must be current members of MWERA at time of presentation and must pay registration for the Annual Meeting.

I hereby certify that, if this symposium is accepted and placed on the program, all presenters of this symposium will register for the Annual Meeting, and be responsible for its presentation. I hereby declare that I have assurances from the other participants that they will register and make their respective presentations.

_____
SIGNATURE DATE

Be certain all of the following are enclosed:

SIX SETS OF MATERIALS, STAPLED TOGETHER, EACH CONTAINING ONE OF EACH OF THE FOLLOWING:

- Symposium/workshop proposal cover sheet
- Separate sheet listing all participants (See No. 4 above)
- 3–5 page Summary of the symposium
- 300–400 word Abstract (to appear in the Meeting Abstracts)
- Self-addressed stamped envelope
- 3 x 5 index card with symposium title, and the name, institutional affiliation, complete address, and day & evening telephone numbers for both the Organizer and Chair, FAX numbers for both, EMAIL addresses for both

THIS INFORMATION MUST BE POSTMARKED FIRST-CLASS BY MAY 15, 1993.

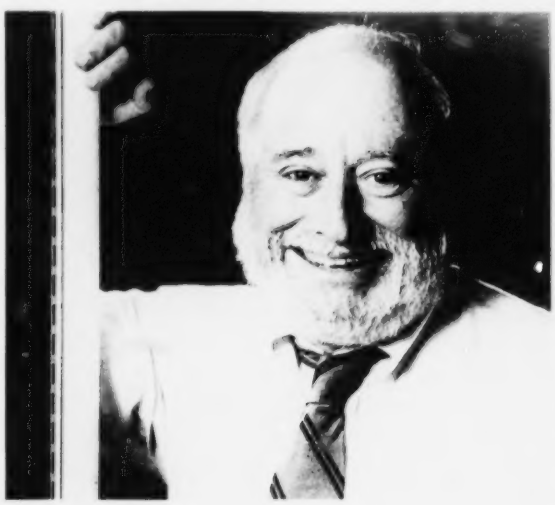
Twin Towers of Educational Leadership at Stanford University:

Interviews with Elliot Eisner and Lee Shulman

Stanford University is recognized as having one of the nation's most respected graduate education programs. Contributing to this reputation is a codre of quality faculty members whose research sets the pace in many areas of educational research. Two of Stanford's distinguished professors granted interviews to the *Mid-Western Educational Researcher* for this issue. They both share some midwestern roots and shared some thoughts about education and educational reform.

Elliot W. Eisner is a Professor of Education and Art at Stanford University. He was trained as a painter at the Art Institute of Chicago, studied design at the Illinois Institute of Technology's Institute of Design, and received his doctorate from the University of Chicago. He has also received three honorary doctorates. Professor Eisner's research interests focus on the development of aesthetic intelligence and on the use of critical methods from the arts for studying and improving educational practice. He has published 15 books, including his most recent, "The Enlightened Eye: Qualitative Inquiry and the Enhancement of Educational Practice." Professor Eisner served as the President of the National Art Education Association, President of the International Society of Education through Art, and is currently President of the American Educational Research Association.

(continued on page 24)



Lee S. Shulman was a faculty member at Michigan State University prior to his appointment as the Charles E. Ducommun Professor of Education and a Professor of Psychology at Stanford University. He studied philosophy as an undergraduate, and received his master's and doctoral degrees in educational psychology, all from the University of Chicago. With the support of the Spencer Foundation he has studied content specific pedagogy and how new teachers learn to teach. He is completing a four-year Carnegie Corporation research program designing and field-testing new strategies for the assessment of teaching. Dr. Shulman served as the President of the American Educational Research Association and is currently the President of the National Academy of Education.

(continued on page 27)

User Friendly, Intellectually Deep: An Interview with Elliot Eisner

By Greg Marchant, Ball State University

Q **As an advocate of discipline-based art education, how do you define "art"?**

A Art is a form of human experience that has emotional quality, organizational coherence, a beginning, middle, and end. In a sense art separates one piece of life from what normally occurs during the course of one's life. The reason I find such a conception useful is that it extends the possibilities of art as a special form of experience to any situation in which humans have intercourse with the world, including science. Scientific inquiry as well as artistic inquiry can provide artistic experience, and anything that provides artistic experience is a result of an artistic form of inquiry or interaction.

Different definitions of art, and there have been dozens, have different virtues. Rather than looking for the one true definition it's more useful to recognize that different conceptions emphasize a different point, have a different thrust, and therefore enable you to see the world in ways that are unique. Leo Tolstoy, for example, defined art as the communication of emotion. Communication, not the expression, but the communication of emotion. It wasn't enough for the artist to display emotion, the artist had to generate that emotion in the recipient, the participant, the reader, or whoever.

Q **How much of this definition of art is knowledge versus creativity?**

A All experience whether in the discovery mode or the expression mode is rooted in prior knowledge, but in qualitative forms. These forms enable us to discover new possibilities. Discovery favors the informed mind, it does not favor the ignorant or the uninformed mind. This all operates in the act of perception, in the act of shaping, forming, and creating. Creativity seldom emerges in a vacuum. Therefore knowledge is not antithetical to creative thinking.

Q **Do you see discipline-based art education as a merger of this discovery and expression mode, as opposed to the more traditional "doing" of art?**

A Discipline-based art education represents a conception of the teaching of art that can be applied to the teaching of music or even to the teaching of science. The most fundamental feature of discipline-based education is that it argues that four areas must be addressed in building a curriculum. These four areas can be integrated, they can be handled independently, but they ought to be addressed. First, curricula ought to make it possible for kids to create images, to work with media, to make things. Artists do that, and there is a "discipline" in making that happen well. Second, children should have an opportunity to learn how to see the world. Seeing the world in the context of art is not the same as seeing the world in the context of practical activity. In practical activity you see the world in order to do something; the object is only an object that serves you in some way. To see the world aesthetically, to see the world artistically, you have to address that world of objects as a source of aesthetic experience. People need to know how to address the world in that way. It is a special way of regarding the world. Third, art has had a history, it exists in a culture, it's a part of the human condition, and understanding that culture, that history, and the connection between that culture and the work of art is important because it informs you in special ways. So the historical and cultural side also needs to be part of a curriculum for students. Finally, a solid curriculum in art would engage youngsters, when they are old enough intellectually, in discussions about the meaning of art itself. What is it? What makes it valuable? Do you learn anything from it? Is good art a matter of taste? Is it only science that informs us? If art does inform us, how? How do you make judgments about the quality of art? These kinds of questions are basically aspects of philosophical aesthetics. You can take that same model and apply it to any subject, such as science: Learning how to read scientific material critically, understanding the place of science in a culture, understanding how it evolved culturally, and understanding scientific epistemology. Those would be the analogues in the teaching of science.

Q **How well do the schools represent the culture and community of our children?**

A As we all know, school is a very special place, and one of the problems that exists is that it is so often separated from the out-of-school culture. What youngsters learn in school is often hard for them to employ outside of school. There is a large gap between what they study, what they learn, what they do in school itself, and the life they lead outside of school. The transfer problem is large. Researchers have tried to get at that issue by talking about situated knowledge and by trying to create conditions inside the schools that are likely to be more consistent with the context that youngsters live in outside of the school, or by trying to create conditions inside the school that increase the chances that the knowledge students acquire will be useful or meaningful. But there is a gap—there has to be some gap. It's inherent in the way in which schools function. There is an inherent difference between

outside and inside. But when the gap is so large that it makes it difficult for transfer to take place, then you have two different worlds.

Q **Might this separation sometimes be a good thing? In circumstances where a child may feel locked into an urban world of poverty and violence or with the isolated rural child; might we want the schools to create an alternate culture that can help shape and change the child's world and understanding?**

A That's right. There are some cultures that we wouldn't want reflected in the school. They may be dangerous or almost devilishly anti-intellectual. That would be a problem, and in many cases that's what we have. We have kids coming from cultures that are so remote from school and that are antagonistic toward schools that it makes it difficult for them to succeed in school. Whereas you can come from another culture which is different than the school, but that culture supports the aims of the school. There are some immigrant populations for example that are very different, but the values of school are supported and youngsters are more likely to do well.

Q **Where does the responsibility of public schools to create a better more productive fruitful culture end? Does it end at the school door or does it extend into the community?**

A Our clients are not limited to the children, our clients include the community the school serves. In doing that job there are different tasks. Even in upper-middle class schools for upper-middle class communities the values within the community may be supportive of the schools, but in a very limited sense. A professional staff may come to the conclusion the kind of intellectual values that they want to foster are really not well understood by the community. They may not be able to foster those values in the school unless the community supports them, and that means they have to try to help the community understand what intellectual life is about and why it is important. I don't believe that it is the responsibility of professional educators simply to be technicians who do anything that the community requires them to do. We have a moral responsibility to make judgments about expectations, and we have a professional obligation to think of our purposes as educators.

Q **What might be done to improve the schools?**

A One of the first things that we need to do is to try to make it possible for teachers, who are major stake holders, to have the opportunity to really become collectively reflective about the institution. We try to bring about change from the top down by mandating changes that come from Washington, D.C., Sacramento California, or some state capital. I think that teachers, along with administrators, need to have a major hand in thinking about their school. The connections that need to be paid attention to are multiple. We try very often to get single "solution," and then implement that single solution as if it's going to make a big change or improve the institution. I think that we need to think much more systemically, more ecologically, about educational improvement. That means thinking about school structure, it means thinking about curricular matters, it means thinking about pedagogical processes, it means thinking about the fundamental goals of the institution, and it means thinking about the way we evaluate what's happening and what we're achieving. Those all need to be orchestrated. They need to be thought about collectively and interactively.

Q **What about the role of parents in that equation?**

A They certainly should have some role. What the role is I think is something that administrators need to think about. I don't think that you can proceed to make the important changes that you want without parent participation. However, I lean initially towards giving teachers the lead. I think that you can push democracy too far in professional matters. I don't think that everyone needs to vote on everything that is done in schools. There are certain areas in which parents should play an important role, but I want to start with the professionals who have dedicated their lives to thinking about education.

Q **Over the past decade or so there has been a movement to narrow the focus of the education of children by defining specific curriculum and nationally test that knowledge. How do we reconcile the need to expand concepts of learning with desires to return to the "good old days?"**

A I think that there are two things that need to be addressed. One has to do with communication channels between schools and parents. There can be things like educational forums in which there is communication about some of the issues that we'v been talking about. That discussion can be related to substantive educational issues that go on in the schools. This doesn't happen very often, even at school board meetings. Another step is that the rights of passage that influence educational priorities like how students are assessed need to be addressed and altered through political action if necessary so that they don't create the kinds of constraints that now exist. If you change those rights of passage you are much more likely to have a receptive public who can come to the conclusion that they are not jeopardizing their child's chances for academic success if they encourage attention to some of these broader issues.

(continued on page 26)

Q **Something that I am frustrated by is how educational policy seems to made without the insights of educational theory and educational research. Why is there such a chasm?**

A Educational research generally is not read by people outside of the academic community. We need to make a concerted efforts to interpret research for people who shape educational policy. My hope is that we will develop at AERA some public service monographs that distilled and report research that is relevant to key educational policy issues. These monographs would be designed for those who shape educational policy, such as state legislators and people in Congress. These monographs should be user friendly, but intellectually deep. They should help policymakers understand the best thinking and research, for example on multicultural curriculum, tracking, on national testing, integrated curriculu, on teacher assessment, and so forth. We need to make a much greater effort. We also have to understand that educational policy making is buffered by political winds not just by a knowledge base. There are also value issues that may not be altered by the facts. People believe in certain visions and hold values. Legislators feel that they have to reflect the wishes of certain constituencies. That is the price one pays for democracy so to speak. Plato was not enthusiastic about democracy. He thought that giving all people the right to vote was a way of giving ignorance the same weight as understanding. That is why he believed in a philosopher king, someone who understood the true, good, and the beautiful and was in a position to move the culture toward this realization. But that's not our situation.

Q **How do you view the growing interest in qualitative research methods in education and the debate that it has inspired?**

A Quantitative and qualitative approaches are two different ways of describing the world. To describe the room that we are sitting in quantitatively you would get length, width, and volume; and it will be an accurate and true description of this room in those terms. A qualitative description of this room will deal with how it looks, how it makes us feel, how it got to be the way it is and what traditions it reflects architecturally, and so on. It's not that the first is bad and the second is good, or that the first is good and the second is bad. These are two different ways of understanding the situation. Educational research traditionally has so emphasized the first that it has provided no space for the later. My aim is not to replace the first with the second, but to broaden the array of approaches that can be legitimately employed by educational researchers. These are options. They can both be employed. They both can be handled well or poorly. They both basically deal with how we see, describe, and come to understand the educational world we are interested in.

Q **What would like to accomplish as President of AERA?**

A I would like to help become more Janus-headed. It has historically looked exclusively to the academy; its publications and its annual meeting have served the academy and have served the academy well. I would like for AERA to have a more public presence in the nation as a whole, and not only toward the policy. We have important social and educational questions in this country I think AERA has some important things to say to the world about educational matters. It is the most prestigious educational organization in this country and it ought to convey what it can to enlighten and facilitate the creation and implementation of sound educational policy by people who care about education.

Q **Is AERA too big?**

A No. When people are being well served they vote with their feet. If people are voting with their feet by coming in the door, I wouldn't say that it was a bad thing.

Q **What do you see as the role for regional groups like MWERA?**

A First of all regional groups have local needs that are special to those areas. AERA had 18,000 members and it is sort of the big arena. I think the regional and state associations can provide a friendly and helpful context organizationally for young researchers coming up, and can address some of the issues that may pertain to state and regional policy developments and educational needs located within regions. I think that the strengthening of state and regional organizations is a good way to strengthen AERA in general.

Reflections on Teacher Education: An Interview with Lee Shulman

By Gregory J. Marchant, Ball State University, and Isadore Newman, The University of Akron

Q If I said to you, "What is teacher reform?" what would you say?

A The notion of reform suggests that it's like reform school. It suggests that something pathological has to be healed; something that's got to be recast. Take, for example, the preparation of teachers. In some ways, the preparation of teachers probably achieved a great equilibrium at the height of the normal schools. Normal schools were perfectly lovely places to prepare teachers. So the question is, why didn't we just continue normal schools? One reason has to do with status and mobility. Normal schools, like the old hospital-based nursing schools, were not part of the higher education system. The way you know whether something is part of a system is whether credits that are earned in one part of the system can be spent in another part. If things from one part of the system can be spent in another, then they're part of the same system. If they can't, they aren't. In old hospital-based nursing programs you went to nursing school for three years, got your RN, wore your cap, then decided if you wanted to get a bachelor's degree in nursing. How many credits did you have that you could take to the university? Zero. Well, the normal schools were not seen as part of the same system of higher education. First you go to the normal school for two or three years and you would teach. Subsequently, you might want to get a university or college degree, but how much transfer credit did you have? In order to be legitimate and to provide the necessary status and mobility to teachers they had to modify the relationship between normal schools, colleges, and universities. What that usually meant was that you either incorporated normal schools within colleges and universities in a merger process, or you transformed what were originally normal schools, like many of our institutions, into colleges and universities. In doing so, one of the things you did was to weaken the autonomy, integrity, and coherence of those institutions as teacher preparation institutions. That's sort of looking at it negatively, the positive sense is that in many ways normal schools were places that preserved the norm. They were places where one learned the "norms" of good teaching. They were modeled. That's why normal schools all have demonstration schools for teachers to demonstrate good teaching that other teachers could emulate. Typically, the textbooks they used were the same texts they would be teaching from in the schools where they would teach. So what you have was a highly conservative function with regard to openness to change. This was what caused Dewey to argue for a laboratory school instead of a demonstration school when he started the Department of Education at The University of Chicago in 1895. He wanted a place where people would experiment with his yet unproven ideas, instead of just demonstrate the best practices that were currently understood.

But anyway, for perfectly good reasons normal schools were destroyed and made into universities in order to empower teachers and to improve their liberal and general education, rather than make them technical masters of the existing trade. Teacher education moved to institutions that had multiple agendas. These multiple agendas all pull teacher education and its curriculum in a variety of ways. So in solving one problem, we created a new one. Teachers are, in all kinds of ways, better educated than ever before, but ironically, less well prepared to teach on Monday morning. The response to that is that if you want to prepare better plumbers, don't send them to universities; that's not what universities and colleges are for. Send them to plumbing schools. So, with regard to the reform of teacher education, the reason that it is an endless activity is because teacher education is pulled on the one hand by the norms and commitments of the academy of the universities, pulled by the demands of preparing a group of people who will be teaching on Monday mornings, and pulled by the demands of school reformers who are not the same as either one of those, but are people who have a vision of what schools might be.

Q I think there's a movement across the country to get rid of colleges of education. There is also the movement shared by the Holmes Group and the Carnegie Foundation to eliminate undergraduate teacher education, and we also had American 2000 which seemed to support alternative teacher certification. How do those fit in with your concept of knowledge and pedagogy?

A I happen to believe strongly, both because of my own research and some of that of my colleagues as well as because of my own socialization, that the primary responsibility of teachers is the conservation, extension, elaboration, and creation of knowledge. That's my sense of what teaching is all about. I think that there are other professional groups that are responsible for the mental health of youngsters, for physical health, for the social development of families, and so on. Although you can't draw sharp lines between the obligations of the professions, there is a need to reorganize the institutions of caring so that it's easier for people who are being prepared to work on the different aspects of the child's welfare to coordinate their efforts. So, I begin with that notion that the unique obligation of the teacher is the intelligence of the nation. And intelligence, as we psychologists know,

(continued on page 28)

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is not a retrospective notion; it's a prospective notion. Intelligence tests are supposed to measure not only what you have learned, but what you are capable of doing, what you are apt to be able to do. It is intelligence in its many manifestations, talent in its many manifestations, that I think schools are about.

Q At AERA a couple of years ago you suggested that pedagogy might be considered the highest level of Bloom's taxonomy of the cognitive domain. How does this fit into your notion of teacher preparation?

A Bloom placed evaluation at the top of the taxonomy (he was an evaluator). I was arguing that even higher on the taxonomy than the ability to critically evaluate competing truth claims is pedagogy. It's the capacity to transform that sort of understanding into instruction that we connect with the lives of others. However, it is very clear that one of the conclusions to be drawn from the more recent research on critical thinking is that unless you embed the learning at the lower levels concurrently in higher order tasks, you can actually inhibit the development of the higher order abilities. If you are too unremittingly sequential you can really screw things up. One way to think about this is to say, "Well, first you get all of your subject matter and then you tack on a fifth year for pedagogy." And that, in effect, is the way California law requires that we do it.

If I had my druthers, I would inter-penetrate the two much earlier. And there are a number of formats for doing it. During the first two years at Brooklyn College the students are studying the liberal arts, but many of them in college elect education as their major already. They have what they call a studio course. They're using the analogy of preparation of an artist. A studio course runs alongside the liberal arts courses. Here they already begin thinking about the pedagogy of the content material. At the University of Dayton, they have a very similar approach that Tom Lasley and his colleagues have helped pioneer. At the same time they're doing liberal arts study they do portfolio work to help them think about the pedagogy of these things. If I were designing teacher education I would rather see some kind of sandwich, goulash, or some interweaving of the pedagogical and the substantive.

In my own teaching, even in the fifth year, I weave the substantive in very, very strongly. I teach a required course for all of our teacher education students. All of them are secondary. It's called Foundations of Learning for teaching. It's sort of a combination of educational psychology and Philosophy of Education. Rather than teach generic concepts, what I do is embed everything we do in specific concepts, even though only 20 percent of the class may actually be learning to teach that cognate. We actually read some Romeo and Juliet together. So everybody discusses some of the psychological and philosophical issues in teaching Romeo and Juliet. What's hard about this? What is it that makes this linguistically, conceptually, and culturally difficult even if you're not a black kid from the inner city? Then my students write case studies of their own interning teaching experiences.

Q One of the goals of Stanford's teacher education program is to develop reflective teachers. How functional is the concept of reflection in teaching and teacher education?

A Sometimes I feel the term should be refraction rather than reflection, because refraction suggests a lens, reflection simply reflects a mirror. In her dissertation research and follow-up research, Anna Richert demonstrated that reflection has got to be guided by both knowledge and points of view. For example, how does one reflect on the quality of the unit he or she has just taught on human evolution and natural selection? What does it mean to reflect on that? First of all one can ask oneself, how intellectually honest was the unit I just taught? How truly faithful was what I taught to the real complexities of human evolution? Did it oversimplify? Conversely, did it not give enough respect to the fact that there are other perspectives? What we find is that unschooled teachers, teachers who are not prepared to think deeply about student understanding and misconceptions, are asking the students, "How did you like the unit?" They ask this type of question instead of doing any careful monitoring of student understanding. You have to know a great deal to understand which relevant kinds of information are worth reflecting upon. That is where reflection shifts from being a mere slogan to being a strategy of teaching and learning from teaching.

Now you ask, what's the role of the school of education? First of all, it has to be perfectly clear, that content knowledge alone is not the only lens through which you have to refract these experiences. You want teachers to connect the subject matter to the pedagogy. You want them to reflect on the representation of subject matter and about the strategies for organizing classrooms into learning environments that work. A lovely example of this is Pam Grossman's book, *The Making of a Teacher*, which won both the AACTE Award for Teacher Education Research and the Outstanding Research Award from the National Council of Teachers of English. It is a book that in large measure contrasts equally well-prepared subject matter specialists in English literature, some of whom have had teacher preparation and some who have not. It is not a statistical study. It is a set of contrastive case studies. What you find are the limitations of deep subject matter alone. People with deep subject matter essentially attempted to reproduce in the classroom the kind of pedagogy they themselves had gotten in graduate school, essentially reteaching their graduate course more slowly and trying to make, or not even trying to make, what Bruner called the courteous translations. The people who had been well-trained as English teachers recognized that the first problem was to try to find some books in the content area that would connect to the ways of thinking, bodies of experiences, and prior learning of the students, and you see an utterly different process of pedagogical reasoning and action building.

Q One of the things you have said is "yes, we can teach people that they have to evaluate." You can teach

people methods of evaluating, but what we also have to teach them are relevant questions to ask. But we don't teach inquiry very effectively; we teach technique. We're still "training" teachers. And I think what you're talking about is that we need to teach people how to think.

A I'm saying more than that. You have to learn how to think within a domain. I think that is what we now understand from the work on critical reasoning. I can know how to think brilliantly about literature and not about the stock market. I can learn to think brilliantly about chemical reactions and not be able to think with the same kind of facility about historical connections.

Q **What you're saying would seem to have major implications concerning specialization in instruction, in particular for elementary teachers. If we are going to accept the notion that any kind of pedagogy is going to be very content specific, then with an elementary teacher you have someone whose job is not to just teach math, but to teach literature, to teach reading, to teach writing, to teach art, in many cases to teach everything. If every kind of knowledge has its own specific pedagogy, and if it takes five years to create a secondary teacher, how are we going to go about making a really good elementary teacher?**

A There are several assumptions that we ought to question. If we learned that we had designed an airplane that was impossible for one pilot to fly, we would not say, "Well, maybe if we train pilots for 15 years they can fly it." Instead we might ask, "How can we either redesign the cockpit or configure a crew capable of flying the airplane?" I feel that the subject matter demands on elementary teachers are greater than the subject matter demands on secondary teachers. The ideas that elementary teachers are trying to teach are in many ways more fundamental than those of secondary school; the minds of the students are more elusive. Add to that the complexity of the multi-subjects expectations. I once characterized the elementary school teacher as a hybrid of Leonardo daVinci and Ann Landers, because you're also supposed to be enormously caring and nurturing. Having said that, I feel it's important to say that most elementary school teachers are already subject specific pedagogues and the subject is reading and language arts.

Q **We have this big push for content knowledge, and I know from looking at a number of studies, if you ask teachers and principals, "What's wrong with bad teachers? When your teachers fail, why do they fail?" the responses tend not to be, "Oh, that science teacher, the quantum physics stuff is beyond him." Principals say the problem is that they can't teach. You ask the teachers what they have problems with, it's not, "Well, I don't understand these laws of physics," or "I don't understand 'whatever.' " They don't understand how to teach it or how to manage the class.**

A We often ask the wrong people the wrong question in the first place. We ask the principal, "Who is a good teacher?" Well, the principal doesn't know quantum mechanics from diddly. The principal's going to walk in with his Madeleine Hunter chart and if the teacher is teaching absolute nonsense about trigonometric functions or about the War of 1812, as long as the kids are on task and teacher seems to be doing advanced organizers and stuff it looks terrific. If you ask a general question, you'll get a general answer. If you ask the question, "What are the attributes of a good teacher of algebra?" then suddenly the characterization changes a little. If I say to you, "What are the characteristics of a good teacher for the first course in statistics for anxious master's students in a school of education?" the answer changes. If the stat teacher doesn't know anything about statistics, then he couldn't share it. But if all he knows is statistics, he's going to have those people wetting their pants. If you asked me the question, "What does somebody need to know to be able to teach Moby Dick?" I will describe to you someone who understands both the mind of Melville and the mind of the high school junior, and the ways in which the turmoils of Ahab and Ishmael and the turmoil of the lives of adolescent human beings in our society connect with one another. Is that just content? No, it's also the ability to understand how, at certain propitious moments, to pose problems that the kids can break up into small groups and work on and bring back. I'm not trying to make it all content, but I'm saying, in some very real sense, content keeps on poking its head up as it informs the pedagogy, as it informs the evaluations.

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Metamorph™: Computer Support for Qualitative Research

By Wendy L. Shapiro, Kent State University, Rebecca Clemente, Ball State University,
Leo W. Anglin, Berry College, and P. Barton Richard, Expansion Software International, Inc.

Overview of Computer Use in Qualitative Research

Qualitative research often requires the analysis of large quantities of unstructured data. Research questions are addressed using data in the form of interviews, observations, field notes, journals, video and audio tapes. There are several major analysis tasks employed by qualitative researchers. These tasks include identifying individual words, counting word frequencies, coding key words, and identifying emerging concepts.

In order to deal with analysis of information qualitative researchers have had to rely on paper, index cards, markers, hole punches, scissors, and tape. Computers are beginning to aid in the process. The most common software tool supporting qualitative research is the word processor. However, several computer software programs are being designed to specifically support qualitative research data analysis (Pfaffenberger, 1988; Tesch, 1990, 1991).

Reflecting on a 1984 special issue of the journal *Qualitative Sociology*, Tesch (1989) comments on the vision and expectations posited in comparison to events which have transpired over the past several years. "No revolutionary software for interpretive text analysis has been introduced.... The dissemination of existing analysis software has been relatively slow, and the literature about computer-assisted qualitative analysis is still sparse" (p. 142). People's expectations were greater than the capabilities of the technology. There were hopes that computers would "listen" and enter the text of audio-taped interviews. There were also hopes that intelligent computers would perform sophisticated analysis. Additionally, it was believed that once the technology was developed it would be rapidly diffused.

The current status of technological support for the process of qualitative research needs to be considered. This paper will address this issue by presenting information on the development of computer programs which support the qualitative research process and focus specifically on Metamorph™[1], an innovative text retrieval software tool.

Software Support and Development

For those faced with recording, organizing, and interconnecting mounds of data, the use of word processing and data base software affords a way to tame this part of the analysis process. Adding codes, copying passages, assembling classification items, attaching analysis notes to files are easily accomplished with word processing software. Easy relative to actually producing multiple copies of data sources, physically cutting and pasting, coding, sorting, and filing the data for latter analysis strategies. Word processing software is not capable of searching for occurrences and/or co-occurrences of noncontiguous words or phrases. Therefore some researchers have ventured into electronically arranging their data into fields based on coding strategies to import into data base programs. This provided a means to search for possible patterns and/or connections between and among categories (fields).

Of interest, but not widely used in qualitative research, are hypertext programs and Artificial Intelligence (AI) (Brent, 1989; Fielding & Lee, 1991; Pfaffenberger, 1988). The advent of hypertext programs has provided a way to link concepts in a nonlinear fashion to facilitate browsing. "Hypertext is...a means of navigating from one node of information to another node of information in an associative manner" (Gluck, 1991, QUALRS-L discussion group). Thoughts of utilizing AI has raised hopes for the creation of AI programs that would perform sophisticated analysis strategies like those employed by human beings. To date AI programs have not been able to imitate the higher cognitive functions of the human brain.

Development and research into AI embodies a variety of approaches. Some AI development strategies are built on (a) rule-based systems, (b) precedent-based systems, or (c) natural language-based systems (Schrodt, 1989). Brent (1989) suggests that two AI subareas, expert systems and natural language understanding, hold promise for qualitative research.

Software Adaptation and Development

Evidence exists that applying technology to the qualitative research process has been beneficial. A group of social scientists attributed the improvement in the quality of their research to their utilization of the microcomputer.

> The social scientists studied...believed that the use of microcomputers in their work has not altered the information-processing tasks in which they engage but that they now have far greater personal control over those tasks and that they are doing them much more effectively. (Danziger, 1989, p. 76).

All aspects of the technological process have not been viewed favorably, however. Researchers have raised concerns (Conrad & Reinharz, 1984; Freidheim, 1984; Lyman, 1984; Pfaffenberger, 1988; Seidel, 1991; and Tesch, 1989). There are concerns with having computer software define the research problems, concerns that researchers may distance themselves from their data, concerns over the accumulation of volumes of data, and

finally, concerns that researchers may prematurely terminate the data analysis process.

Ways have been found to address these concerns by using existing software and creatively adapting these programs to analysis needs. Adaptation occurs by combining the best of existing software and incorporating the researchers' analysis techniques and strategies. The adaptive process has led qualitative researchers into the realm of software design. Examples of these programs are Aquad™, Ethnograph™, Ethno™, HyperQual™, HyperResearch™, Hypersoft™, MECA™ (Map Extraction Comparison and Analysis), NUDIST™ (Non-numerical Unstructured Data Indexing Searching and Theorizing), Qualog™ Qualpro™ TAP™ (Text Analysis Package), and Textbase Alpha™ (see Appendix A).

A reflection of the interest in computer use for data analysis can be found in the initial dialogue flooding the QUALRS-L[2] (Qualitative Research for the Human Sciences) discussion group via BITNET. This discussion group, begun September 6, 1991, currently has over 370 members. Discussions of the use of computers in qualitative research dominated this list for the first month and a half. These early discussions focused on (a) types and uses of computer programs known (i.e., Ethnograph™) and not as well known (i.e., Kwalitan™[3]), (b) experimental software (i.e., ATLAS/ti[4], ART[5]) and its availability to beta-tester, (c) strengths of IBM and Macintosh, and (d) the use of and explanation of hypertext.

For some researchers, computer use is a necessity in data analysis. As expressed by a participant in the QUALRS-L discussion group:

> I think part of the fascination of social scientists with computer programs such as ethnograph and hypertext arise out of a subjective frustration that occurs when one is too close to one's data—and needs to find a relatively unbiased way to approach the text. The rapid manipulation of text, and the oftentimes accidental juxtaposition of images, can allow experimentation with data that could take, literally, forever, without the new media technologies. Statisticians aren't the only ones, now, who have convenient 'tools' to explore recurring patterns in their data. (Wilson, 1991, QUALRS-L discussion group).

One thing is certain, as additional software tools and modifications to existing programs become available, there will be users ready, willing, and able to apply them in qualitative research.

Metamorph™: A Discovery

The nature of computer software programs tends to be highly structured. This may pose a problem to the qualitative researcher trying to fit unstructured data into a highly structured computer environment. A solution to this problem may exist in the form of a uniquely designed text analysis program, Metamorph™. This program is able to manipulate raw (ASCII) data without imposing classical, Boolean logic.

Qualitative data analysis required the researcher to sift through large quantities of text to develop taxonomies, explicate themes, formulate hypotheses and/or generate support for triangulation. Unfortunately, most software programs do not provide the liberty to freely search multitudes of unorganized textual data.

This sophisticated computer software program was accidentally discovered that may have the potential to assist many qualitative researchers in data analysis. A professor at Kent State University, Dr. William Patton, had been reading through some business articles that were reviewing computer software. He came across a description of Metamorph™, a free-form text analysis tool used primarily by business and government agencies. Dr. Patton believed the nature of Metamorph™ could lend itself to qualitative research. Several of Dr. Patton's colleagues felt the potential of this program was worth exploring and contacted the developers.

It was to Kent State University's advantage that Metamorph™ was written and distributed by a Cleveland business firm, Expansion Programs International, Inc. Several Kent State University researchers brought the author of Metamorph™, Bart Richards, to campus to explore the possibilities of using his program for qualitative research. Kent State University has been working with Richards for nearly two years in determining ways to adapt the essence of Metamorph™ to the needs of the qualitative research community.

Metamorph™: A Description

Metamorph™ is a computer software program designed to work with large quantities of unstructured text. It is currently being used in many fields and areas of inquiry such as (a) medicine (e.g., cancer and AIDS databases), (b) air mishap analysis, (c) law, (d) Bible study, and (e) government contract and procurement tracking.

Typically, Metamorph™ is used to quickly scan documents, manuals, and unstructured records to find information. By historically retracing the information searching process we can see the benefits of the Metamorph™ technology. Looking back only a decade ago the researcher would go to the library and begin his/her literature search by looking through a card catalogue, table of contents or indexes. Once referents and pages were found, each item was manually located and read. Relevant information was duplicated for future use. The procedure was slow and tedious.

In the last eight years on-line databases have aided in the search process. Databases are highly structured information sources. Raw or unstructured information (i.e., reference manuals, transcriptions, etc.) is manipulated into broad categories called records, then subdivided into more discreet categories called fields. Information is retrieved by using key words that have been predetermined by the database program. The person who does the information search is dependent upon the design of the database. Free and random searching is typically not possible.

Unlike the Boolean logic designs of most database programs,

(continued on page 32)

Metamorph™: Computer Support for Qualitative Research (continued)

Metamorph™ is built on a systematic structure of pattern matching and set logic. It may have the potential to revolutionize information searching. This program is useful for both on-line databases (e.g., ERIC and Psychological Abstracts) and ASCII transcriptions. The program user is able to freely search information by entering a word, a concept, a proper name, or a combination of words. Metamorph™ is able to rapidly scan vasts amounts of information finding "hits." The Metamorph™ "hit" is the actual word(s) or a thesaurus form of the word(s). This information is presented on the computer monitor in its original context with the "hits" highlighted.

Once the information is presented on-screen, the person using Metamorph™ is able to mark any information he/she wants to retain and save this information to an appendable file. This process allows rapid, unstructured information searching, in-context judgment of information relevance, and "clipping" of selected information which can be saved in ASCII format.

What does Metamorph™ Mean for Qualitative Research?

Unlike other computer data analysis software, Metamorph™ is a tool which can be utilized throughout the research process. It provides a way for researchers to handle large quantities of data that might otherwise appear daunting. There is often a concern that significant literature may be overlooked when searching through vast amounts of information. Because of Metamorph's™ efficient and thorough search "engine" it is possible to (a) search through all the available article abstracts found on CD-ROM and, (b) review the selected articles (converted to ASCII text files) using Metamorph™.

After the initial review of literature, Metamorph™ can continue to be used at various stages of data analysis. Qualitative data are entered into the computer as ASCII text files. These data can take the form of field notes, text transcriptions of audio tapes, subjects' and researcher's journals, etc. Initial data analysis can begin once these files are available to the Metamorph™ computer program.

Data query can be done in a natural language format. Metamorph™ is built on semantic relationships providing the researcher with the flexibility to interact with his/her data using the language of the participants. To understand how Metamorph™ accomplishes this task think about matching all query word items against all possible thesaurus entries. After making list sets of all thesaurus combinations (see Figure 1), Metamorph™ rapidly scans the text files for corresponding matches. When a "hit" is found, it is highlighted and displayed in context on the monitor for the researcher to review (see Figure 2, top of page 33). This provides immediate information to the researcher on how successful the query was and leads the researcher to utilize higher level thinking strategies to uncover subsequent findings or in guiding the rephrasing of the query. In essence, Metamorph™ allows the researcher to have a conversation with his/her data.

Figure 1

Samples of Equivalents for Thesaurus Entries "Problem" and "Care."

Editing: **Equivalence lists**
<CR> = **Ok**, **Delete**, **Edit**
—Page 1(Last) ——— PgDn: F, PgUp: B———————————
= problem;n 18 equivalences

brother;n	headache;n	query;n
care;n	issue;n	question;n
conundrum;n	labyrinth;n	riddle;n
difficulty;n	mystery;n	trouble;n
enigma;n	predicament;n	worry;n
hang up;n	puzzle;n	

– < ^Z:help > – < ESC:prev menu > — < ^R:top menu > ———————

Editing: **Equivalence lists**
<CR> = **Ok**, **Delete**, **Edit**
—Page 1(Last) ——— PgDn: F, PgUp: B———————————
= care;n 55 equivalences

administration;n	distress;n	thoughtfulness;n
anxiety;n	fidelity;n	trouble;n
attention;n	heed;n	tutelaage;n
bother;n	impatience;n	wariness;n
bugbear;n	industry;n	worry;n
caution;n	interest;n	worrying;n
chagrin;n	misfortune;n	zeal;n
circumspection;n	niceness;n	attention;n
concern;n	perplexity;n	beware;n
conduct;n	precaution;n	carefulness;n
conscientiousness;n	problem;n	concern;n
consideration;n	prudence;n	guardianship;n
custody;n	regard;n	management;n
difficulty;n	regret;n	prudence;n
diligence;n	scruples;n	supervision;n
disaster;n	solicitude;n	attend;n
discretion;n	supervision;n	

Preliminary broad groupings can be saved into separate text files. These files can be further analyzed to facilitate the refinement of data groups into thematic relationships, domain categories or matrices building. In multiple case study research, within-site files can be queried to develop insights into cross-sites' similarities and differences.

Qualitative Research Studies Using Metamorph™

Metamorph™ is currently being used at Kent State University[6] to analyze data on several qualitative research projects. Metamorph™ was first purchased by the Department of Special Education and used to assist in scanning the ERIC CD-ROM for articles in the area of deaf education.

More extensive exploration of Metamorph's™ possibilities included analyzing teachers' journal transcriptions and researchers' observational notes for the Lighthouse Educational Enhancement Project. This IBM partnership grant involves Kent State University

Figure 2

Sample of Two Hits Based on the Intersection of the Search Words "Problem" and "Care."

File: command.log
Quit, <CR> = Next, Last, exit Context, Top, Bottom, Editor, Hot func, Spit, Make – Fwd, Rev, Point, Goto Hit ---------- PgDn: F, PgUp: B----------

Date: 4/19/91

The major activity of today involved passing out and collecting Health and Physics tests. Everyone cooperated very well, and we got everything taken ***care*** of. We are having some ***problems*** with people not returning books, pens, pencils, white out, tape, scissors, etc. Everything else is running smoothly. We faxed in the band documentations of who practiced when. That's about it!

– < ^Z:help > – < ESC: prev menu > – < ^R:top menu > ----------

<care problem

File: medical.log
Quit, <CR> = Next, Last, exit Context, Top, Bottom, Editor, Hot func, Spit, Make – Fwd, Rev, Point, Goto Hit ---------- PgDn: F, PgUp: B----------

Apparently, he was trying to get work done, but when we found him, he was supposed to be sleeping. An Education Specialist tried to ask him a question, but he was unresponsive and shivering violently. He immediately carried him to the male medical quarters where we began questioning. It was difficult for him to answer ***questions***. He either could not speak or had ***difficulty*** comprehending what we were saying. He had not slept more than four hours the entire simulation while he was scheduled for sixteen so

– < ^Z:help > – < ESC: prev menu > – < ^R:top menu > ----------

<care problem

and three surrounding school districts working together to restructure math education, supported by the use of technology.

The success of Metamorph™ as a qualitative research tool has been shared with several research classes at Kent State University. As a result, one master degree student and three doctoral students have begun working with Metamorph™ to assist them with their research projects and/or dissertations.

The most significant breakthrough with Metamorph™ as a qualitative research tool has happened most recently. An elaborate partnership grant currently in progress at Kent State University, entitled Cooperative Alliance for Gifted Education (CAGE), involves as many as 15 different educational, community and business agencies committed to restructuring education. In order to determine the effectiveness of their project, they are accumulating vast quantities of unstructured, text-based data in the form of observations, interviews, journals, and videotape. A team of researchers has begun to categorize this data with the help of Metamorph™.

As the CAGE team members work with Metamorph™ they have been identifying their research needs. Ways to adapt and strengthen Metamorph™ have been determined. For instance, the researchers identified a need to attach personal notes to the electronic text. They also wanted to identify portions of text by category and later sort this information into manageable files. The beta version of this adaptation of Metamorph™ is currently being tested.

Metamorph™ is proving to be the type of computer tool that can benèfit qualitative research. It is the researcher that drives Metamorph™ through every step in the data refinement process The researcher decides what to keep and what to get rid of. The researcher determines the categories and domains. At all points in the process it is the researcher who must extract meaning from his/her data. Metamorph's™ greatest contribution to qualitative research is its ability (a) to actively involve the researcher in natural language querying, and (b) to speed up the process of dealing with large amounts of unstructured information.

Computer technology has lifted some of the burden off the data intensive tasks involved in qualitative research. Having the researcher immersed in the software design process is critical to the evolution of this type of technology. In so doing the technology will be adapted to the research process and not vice versa.

Appendix A

The software programs mentioned in this article fall into two broad categories, interpretive/descriptive programs and theory building analysis programs (Tesch, 1990).

Interpretive/Descriptive

The Ethonograph™ (MS Dos)
Qual Pro™ (MS Dos)
Textbase Alpha™ (MS Dos)
HyperQual™ (Macintosh)
Ethno™ (MS Dos)
Hypersoft™ (Macintosh)
MECA™ (MS Dos)
Qualog™ (Mainframe)
TAP™ (MS Dos)

Theory Building Analysis

Aquad™ (MS Dos)
HyperResearch™ (Macintosh)
NUDIST™ (Macintosh)

Specific information, demonstration disks, and consultation can be obtained for: Aquad™, The Ethnograph™, HyperQual™, HyperResearch™, NUDIST™, Qualpro™, and *Textbase Alpha*™ by writing or calling Qualitative Research Management, 73-425 Hilltop Road, Desert Hot Springs, CA 92240, phone: (619) 329-7026.

Addresses for Specific Programs:

Aquad™: Qualitative Research Management, 73-425 Hilltop Road, Desert Hot Springs, CA 92240, USA.

Ethno™: National Collegiate Software of Duke University Press, 6697 College Station, Durham, NC 27708, USA.

The Ethnograph™: Qualitative Research Associates, P.O. Box 2240, Corvallis, OR 97339, USA.

(continued on page 34)

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Metamorph™: Computer Support for Qualitative Research *(continued)*

HyperResearch™: Researchware Inc., 20 Soren Street, Randolph, MA 02368, USA.

Hypersoft™: Ian Dey, 45 Colinton Road, Edinburgh, EH10 SEN, UK.

MECA™: Dr. Kathleen Carley, Department of Social and Decision Science, Carnegie Mellon University, Pittsburgh, PA 15213, USA.

NUDIST™: NUDIST Project, ACRI, LaTrobe University, Bundoora, VIC 3083.

Qualog™: Ernest Sibert and Anne Shelly, Syracuse University, 4-116 CST, School of Computer and Information Science, Syracuse, NY 13244, USA.

Qualpro™: Qualitative Research Management, 73-425 Hilltop Road, Desert Hot Springs, CA 92240, USA.

TAP™: Dr. Kriss A. Drass, Department of Sociology, Southern Methodist University, Dallas, TX 75275, USA.

Textbase Alph™: Qualitative Research Management, 73-425 Hilltop Road, Desert Hot Springs, CA 92240, USA.

Articles and/or chapters concerning software designed for qualitative research can be found in:

Fielding, N. G., & Lee, R. M. (Eds.). (1991). *Using computers in qualitative research.* Newbury Park, CA: Sage Publications, Inc.

Tesch, R. (1990). *Qualitative research: Analysis types and software tools.* Bristol, PA: Falmer Press.

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Freidheim, E. A. (1984). Field research and word processor files: A technical note. *Qualitative Sociology, 7*(1 and 2), 90-97.

Gerson, E. M. (1984). Qualitative research and the computer. *Qualitative Sociology, 7*(1 and 2), 61-74.

Gluck, M. (September 27, 1991). Hypertext background. Discussion on Qualitative Research for the Human Sciences, QUALRS-L@UGA.BITNET.

Lyman, P. (1984). Reading, writing, and word processing: Toward a phenomenology of the computer age. *Qualitative Sociology, 7*(1 and 2), 75-89.

Metamorph™: Version 3.4 for DOS. (1991). Cleveland, OH: Thunderstone Software from Expansion Programs International, Inc.

Pfaffenberger, B. (1988). *Microcomputer applications in qualitative research.* Newbury Park, CA: Sage Publications, Inc.

Schrodt, P. A. (1989). Artificial intelligence and formal models of international behavior. In G. Blank, J. L. McCartney, & E. Brent (Eds.), *New technology in sociology: Practical application in research and work* (pp. 113-127). New Brunswick, NJ: Transaction Publishers.

Seidel, J. (1991). Method and madness in the application of computer technology to qualitative data analysis. In N. G. Fielding & R. M. Lee (Eds.), *Using computers in qualitative research* (pp. 107-116). Newbury Park, CA: Sage Publications, Inc.

Tesch, R. (1989). Computer software and qualitative analysis: A reassessment. In G. Blank, J. L. McCartney, & E. Brent (Eds.), *New technology in sociology: Practical application in research and work* (pp. 141-154). New Brunswick, NJ: Transaction Publishers.

Tesch, R. (1991). Software for qualitative researchers: Analysis needs and program capabilities. In N. G. Fielding & R. M. Lee (Eds.), *Using computers in qualitative research* (pp. 16-37). Newbury Park, CA: Sage Publications, Inc.

Wilson, T. (September 25, 1991). Perspective. Discussion on Qualitative Research for the Human Sciences, QUALRS-L@UGA.BITNET.

Notes

[1] For additional information on Metamorph™, write Expansion Programs International, Inc., 1115 Edgewater Drive, Cleveland, OH 44102, USA, phone (216) 631-8544, fax (216) 281-0828.

[2] Qualrs-L, to join this discussion group via Bitnet issue the following command at the VM/CMS prompt: TELL LISTSERV AT UGA SUB QUALRS-L (your full name). From a Vax (you must be at the MAIL prompt) issue the SEND command. To: in%"listserv@uga", Subject: Subscribe Qualrs-l, Message line: Sub qualrs-l (your full name).

[3] Kwalitan 3.0, Contact person: Vincent Peters, U211384@HNYKUN11.BITNET, Department of Research Methodology, Catholic University of Nijmegen, The Netherlands.

[4] ATLAS/ti, Contact person: Thomas Muhr, MUHRTH@BOTU11.BITNET, Project ATLAS, Technical University of Berlin.

[5] ART (Abductive Resource Tool), Contact person: Gary Shank, P30GDS1@NIU.BITNET, EPCSE Department, Northern Illinois University.

[6] For information on Metamorph™ projects at Kent State University, contact W. L. Shapiro (216) 672,7918, Bitnet: WSHAPIRO@KENTVM.

Performance Assessment

By David Sweet, U.S. Department of Education

Performance assessment, also known as alternative or authentic assessment, is a form of testing that requires students to perform a task rather than select an answer from a ready-made list. For example, a student may be asked to explain historical events, generate scientific hypotheses, solve math problems, converse in a foreign language, or conduct research on an assigned topic. Experienced raters—either teachers or other trained staff—then judge the quality of the student's work based on an agreed-upon set of criteria. This new form of assessment is most widely used to directly assess writing ability based on text produced by students under test instructions.

How Does It Work?

Following are some methods that have been used successfully to assess performance:

• Open-ended or extended response exercises are questions or other prompts that require students to explore a topic orally or in writing. Students might be asked to describe their observations from a science experiment, or present arguments a historic character would make concerning a particular proposition. For example, what would Abraham Lincoln argue about the causes of the Civil War?

• Extended tasks are assignments that require sustained attention in a single work area and are carried out over several hours or longer. Such tasks could include drafting, reviewing, and revising a poem; conducting and explaining the results of a science experiment on photosyntheses; or even painting a car in auto shop.

• Portfolios are selected collections of a variety of performance-based work. A portfolio might include a student's "best pieces" and the student's evaluation of the strengths and weaknesses of several pieces. The portfolio may also contain some "works in progress" that illustrate the improvements the student has made over time.

These methods, like all types of performance assessments, require that students actively develop their approaches to the task under defined conditions, knowing that their work will be evaluated according to agreed-upon standards. This requirement distinguishes performance assessment from other forms of testing.

Why Try It?

Because they require students to actively demonstrate what they know, performance assessments may be a more valid indicator of students' knowledge and abilities. There is a big difference between answering multiple choice questions on how to make an oral presentation and actually making an oral presentation.

More important, performance assessment can provide impetus for improving instruction, and increase students' understanding of what they need to know and be able to do. In preparing their students to work on a performance task, teachers describe what the task entails and the standards that will be used to evaluate performance. This requires a careful description of the elements of good performance, and allows students to judge their own work as they proceed.

What Does the Research Say?

Active learning. Research suggests that learning how and where information can be applied should be a central part of all curricular areas. Also, students exhibit greater interest and levels of learning when they are required to organize facts around major concepts and actively construct their own understanding of the concepts in a rich variety of contexts. Performance assessment requires students to structure and apply information, and thereby helps to engage students in this type of learning.

Curriculum-based testing. Performance assessments should be based on the curriculum rather than constructed by someone unfamiliar with the particular state, district or school curriculum. This allows the curriculum to "drive" the test, rather than be encumbered by testing requirements that disrupt instruction, as is often the case. Research shows that most teachers shape their teaching in a variety of ways to meet the requirements of tests. Primarily because of this impact of testing on instruction, many practitioners favor test reform and the new performance assessments.

Worthwhile tasks. Performance tasks should be "worth teaching to"; that is, the tasks need to present interesting possibilities for applying an array of curriculum-related knowledge and skills.

The best performance tasks are inherently instructional, actively engaging students in worthwhile learning activities. Students may be encouraged by them to search out additional information or try different approaches, and in some situations, to work in teams.

What Does It Cost?

These positive features of performance assessment come at a price. Performance assessment requires a greater expense of time, planning and thought from students and teachers. One teacher reports, "We can't just march through the curriculum anymore. It's hard. I spend more time planning and more time

(continued on page 36)

coaching. At first, my students just wanted to be told what to do. I had to help them to start thinking."

Users also need to pay close attention to technical and equity issues to ensure that the assessments are fair to all students. This is all the more important as there has been very little research and development on performance assessment in the environment of a high stakes accountability system, where administrative and resource decisions are affected by measures of student performance.

What are Examples of Successful Strategies and Programs?

• Charlotte Haguchi is a third- and fourth-grade teacher at Farmdale Elementary School in Los Angeles. Regarding assessment and instruction as inseparable aspects of teaching, Ms. Haguchi uses a wide array of assessment strategies to determine how well her students are doing and to make instructional decisions. She uses systematic rating procedures, keep records of student performances on tasks, and actively involves students in keeping journals and evaluating their own work. Ms. Haguchi can be seen in action along with other experts and practitioners in the videotape *Alternatives for Measuring Performance* by NCREL and CRESST (See Jeri Nowakowski and Ron Dietel, below).

• William Symons is the superintendent of Alcoa City Schools in Alcoa, Tennessee. Seeking higher, more meaningful student standards through curriculum reform, Dr. Symons works with school staff and the community to create a new curriculum focused on standards and an assessment linked to the curriculum. Comments and advice from Dr. Symons and other practitioners and experts are available on the audiotape *Conversations about Authentic Assessment* by Appalachia Educational Laboratory. (See Helen Saunders, below.)

• Ross Brewer is the director of planning and policy development in the Vermont Department of Education. Vermont is assessing fourth- and eighth-grade students in writing and mathematics using three methods: a portfolio, a "best piece" from the portfolio, and a set of performance tasks. Other states that have been very active in developing and implementing performance assessments include: California, Arizona, Maryland, New York, Connecticut, and Kentucky. (See Ed Roeber and state officers, below.)

Where Can I Get More Information?

W. Ross Brewer, Planning and Policy Department, Vermont Department of Education, Montpelier, VT 05602, (802) 828-3135.

Don Chambers, National Center for Research in Mathematical Sciences Education, University of Wisconsin at Madison, 1025 West Johnson Street, Madison, WI 53706, (608) 263-4285.

Ron Dietel, National Center for Research on Evaluation, Standards, and Student Testing (CRESST)/UCLA, 145 Moore Hall, 405 Hilgard Avenue, Los Angeles, CA 90024-1522, (310) 206-1532.

James Gilchrist, New Standards Project, Learning, Research, and Development Center, 3939 O'Hara Street, Pittsburgh, PA 15260, (412) 624-8319.

Kate Maloy, National Research Center on Student Learning/LRDC, 3939 O'Hara Street, Pittsburgh, PA 15260, (412) 624-7457.

Joe McDonald, Coalition of Essential Schools, Brown University, Box 1969, Providence, RI 02912, (401) 863-3384.

Jeri Nowakowski, North Central Regional Educational Laboratory (NCREL), 1900 Spring Road, Suite 300, Oak Brook, IL 60521, (708) 571-4700.

Edward Reidy, Office of Assessment and Accountability, Kentucky Department of Education, 19th Floor Capital Plaza Tower, 500 Mero Street, Frankfort, KY 40601, (502) 564-4394.

Douglas Rindone, Division of Research, Evaluation and Assessment, Connecticut Department of Education, Box 2219, Hartford, CT 06145, (203) 566-1684.

Ed Roeber, Council of Chief State School Officers, 1 Massachusetts Avenue NW, Suite 700, Washington, DC 20001-1431, (202) 336-7045.

Larry Rudner, ERIC Clearinghouse/AIR, 3333 K Street NW, Suite 300, Washington, DC 20007, (202) 342-5060.

Helen Saunders, Appalachia Educational Laboratory, 1031 Quarrier Street, P.O. Box 1348, Charleston, WV 25325, (304) 347-0400.

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Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

Do you support the practice of using the results of standardized achievement tests as the criteria for student promotion to the next grade level? Why? If yes, at what grade level(s)?

No. Never. Students should always be promoted, but never awarded degrees if they haven't met the competencies implied by the degree.

—*David Berliner, Arizona State University*

Standardized reading tests have many purposes including suggestions for instruction. Although most intermediate schools classify students by grades, there are great variations in the levels at which students function by grade and within grades. Promoting or retaining students in a grade is usually a serious matter that should be based on many criteria—student functioning, whether the students' needs will be better met in the next higher grade or not, and how the student feels about promotion or non-promotion. A test score is only one of the criteria in the decision.

—*Jeanne Chall, Harvard University*

No. The "promotion decision" is actually much more frequently a "retention decision" that should be approached with broad clinical sensitivity by teachers, parents, administrators, and the students themselves. Test performance is one potentially useful input into this important decision, but is, by itself, insufficient.

—*Christopher Clark, Michigan State University*

No, I would not. I would not advocate using any one indicator of performance for promotion, but rather a "performance profile" which would include standardized test scores, beginning as early as students take these tests.

—*Lyn Corno, Teachers College Columbia University*

No. All the emphasis on standardized testing is a way to avoid facing up to the real problems that exist in our schools. It is perfectly clear that tests don't facilitate learning. If we use standardized tests as the basis for promotion to the next grade, what we will accomplish is focusing people's attention on how to pass standardized tests.

—*Edward Deci, University of Rochester*

No. The grade level is a myth; there is no such thing. The effort to measure grade levels by means of standardized achievement tests merely mystifies the myth.

—*John Goodlad, University of Washington*

Not the only criteria. Too many students are poorly served. I hope portfolios can be used to supplement the standardized tests.

—*Maxine Greene, Teachers College Columbia University*

If you mean "the" criterion, my answer is that I do not support such use. My reasons are rooted in beliefs about test fairness and other sociopolitical perspectives, but they are also strongly supported by my understanding of the narrow range of most tests, and the minimal intellectual requirements they call forth. Also, I hold the view that the local school context, with particular emphasis on its curriculum, is seldom matched by standardized test items.

—*Gary Griffin, University of Arizona*

No. I do not. No single test, given at any single time and divorced from consideration of contextual factors, should be used as the sole criterion for making such important decisions about a child's educational program.

—*Thomas Guskey, University of Kentucky*

Under *optimal* assessment circumstances, that is, when criterion-referenced tests measuring truly worthwhile outcomes are employed, there may be merit in using students' test results as promotion criteria. Typically, the assessment circumstances aren't optimal.

—*W. James Popham, IOX Assessment Associates*

I do not support the practice of using the results of standardized achievement tests as the criterion for student promotion. First, research thus far has not shown failure to promote a student as an effective teaching strategy. Second, achievement tests should be carefully aligned to instruction; currently our nonstandardized curriculum varies in a way that prevents alignment by a single standardized test.

—*Andrew Porter, University of Wisconsin-Madison*

Yes, but beginning in sixth grade. Standardized achievement tests have the potential of tightening up what is currently a relaxed educational system in elementary and secondary schools and causing us finally to ponder seriously "what is most worth knowing!"

—*Kevin Ryan, Boston University*

No. The use of only standardized achievement tests as the criteria for student promotion promotes a misconception of providing an equal opportunity for all students to succeed academically. Utilizing portfolio assessment for promotion is the key element if we want all students to have a chance to succeed.

—*Jane Stallings, Texas A&M University*

No. Standardized achievement tests attempt to assess only a small part of what children need to learn. The school needs to develop a plan for the student to have opportunity for continuous progress in his learning, rather than a rigid organization of the curriculum.

—*Ralph Tyler, Center for Advanced Study in Behavioral Sciences*

In a well-designed and implemented system, yes—for all grade levels.

—*Herbert Walberg, University of Illinois-Chicago*

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The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local, and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1993 dues of $10 for students and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to:* Charles C. Anderson, Jr., MWERA Executive Officer, 1332 Southwind Drive, Northbrook, IL 60062; phone (708) 564-4796.

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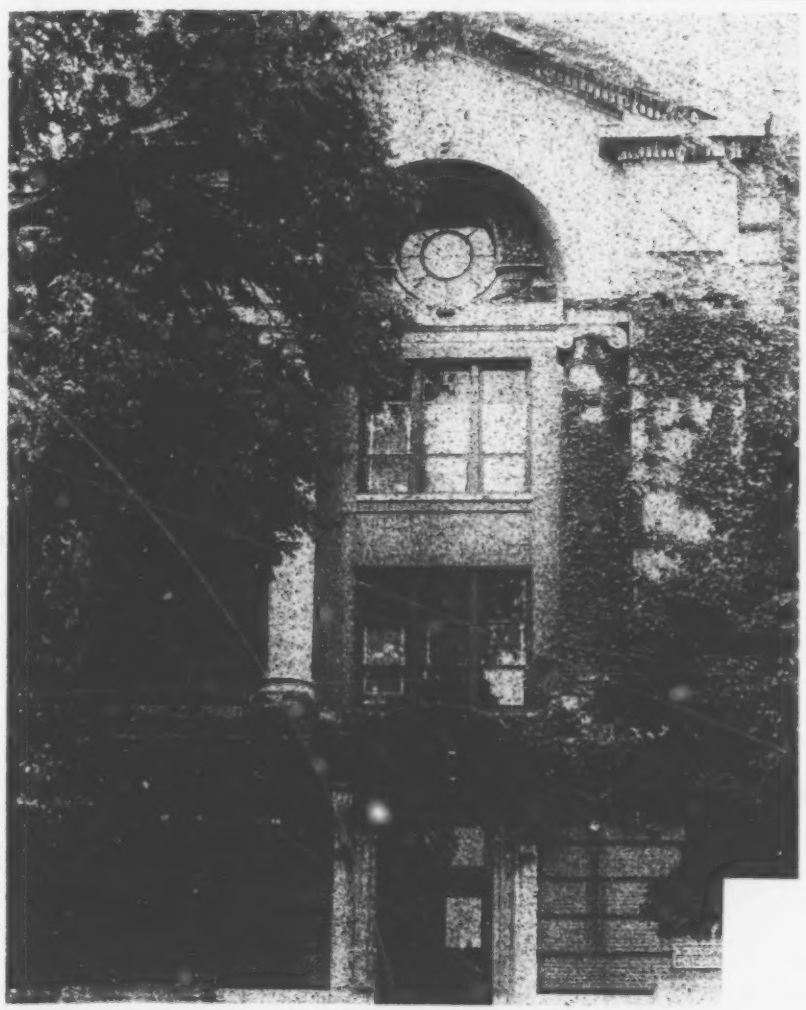

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I would like to thank MWERA and, specifically, Dennis Leitner, Ayres D'Costa, Barbara Plake and Ken Kiewra for the opportunity to serve this organization in the role of co-editor, along with Greg Marchant.

The intent of the MWERA journal from its inception has been to showcase scholarly activities and to facilitate individuals interested in publishing in our journal by providing them with supportive professional review and editorial comments. We cannot thank enough the reviewers many of whom have been identified in the Update section of this issue, for giving so generously of their professional time.

It is hard to explain the stress involved in trying to make deadlines, especially when a number of important variables such as manuscripts being returned on time with editorial comments and revisions, and printing and mailing delays, are not under your control. To survive putting out a journal when there is not a large backlog of manuscripts, one has to have an effective support system to be able to call on friends for favors and colleagues for contributions and their professional involvement. I want express my sincere thanks to all who have come to our aid in time of need.

I have had the good fortune to work with my co-editor previously, and while I expected that collaborating with Greg on the journal would be a productive undertaking, I never could have anticipated the extent of the professional and personal pleasure I have derived. In the previous editorial comments Greg indicated that educational leaders across the country have spoken very positively about the journal. What Greg neglected to mention is that a good part of the journal's format, such as the Voices and Interview sections were his conceptualization. I would like to acknowledge my professional esteem and friendship for Greg Marchant and to again thank our MWERA colleagues for honoring us with the opportunity to serve an organization which we value so highly.

Our best wishes for continued growth and success to the new editors.

—Isadore Newman

ON THE COVER

The Ohio State University College of Education. Founded in 1870, The Ohio State University is a comprehensive urban institution with more than 59,000 students and 4,500 faculty. It offers more than 8,000 courses in the arts, sciences, humanities, and all major professional fields. Through its learning centers, special programs, and research and development offices, the University serves not only the State of Ohio, but the United States and the international community, becoming one of our nation's largest academic and research centers.

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

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Volume 6, No. 3 Summer 1993

FEATURE

In Conclusion: Praise for American Public Education
By David C. Berliner, Arizona State University
2

ARTICLES

The Effects of a School-University Collaborative Change Project on Teacher Behaviors: A Case Study
By James T. Hardy, The University of Akron, and Richard Ambrose, Kent State University
8

AERA Meeting Participants' Ratings of Journals in Their Disciplines
By M. Cecil Smith, Russell N. Carney, Wesley C. Covalt, and Mary Beth Mann
14

MWERA Communication and Update
17

Research Alive: How Accurate is the Conventional Wisdom About Classroom Testing Practices?
By Jack Snowman, Southern Illinois University at Carbondale
19

Assessment, Instruction, Advice: An Interview with W. James Popham
By Barbara S. Plake, Buros Institute of Mental Measurements, University of Nebraska-Lincoln
21

Developing Structural Equation Models
By Randall E. Schumacker, University of North Texas
25

Insidious Structural Errors in Latent Variable Models
By John T. Pohlmann, Southern Illinois University at Carbondale
29

Student Assessment of an Electronic Learning System
By Mark Charles Fissel, Ball State University
33

Voices in Education
Inside Back Cover

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In Conclusion: Praise for American Public Education

By David C. Berliner, Arizona State University

Abstract

Data which suggest the failure of America's schools to educate its youth do not survive careful scrutiny. School reforms based on these questionable data are wrongheaded and potentially destructive to quality education. Reforms of the kind proposed by those who have started from an assumption that America's schools have failed will exacerbate the differences between the "have" and the "have-not" school districts.

It is not difficult to understand why so many people are concerned about schooling and youth. One only has to read newspaper headlines and summaries to learn why people think so poorly of the system that attends to the care of the next generation. For example, these stories were culled from the media:

- In a typical year during the 1980s, minors aged fourteen to nineteen accounted for 43.4 percent of all criminal offenders; 54 percent of all murder cases in the nation involved jobless youth.[1]
- High school girls turn to prostitution for entertainment, curiosity, and as a source of revenue—police report their rate up 262 percent.[2]
- At a public junior high school a gang of six students had extorted $2,500 from about 120 classmates.[3]
- A fourteen year-old student who was repeatedly tormented and beaten by school toughs hangs himself.[4]
- Forty-four high school students go wilding, raid five shops for merchandise.[5]
- Teen tortured by two school gang members, cigarettes used to burn his hands and back.[6]
- Kids report feeling refreshed after beating up on another child.[7]
- Because they didn't like a lecture on how they might lead a better life, eight junior high toughs demanded an apology from their teacher. He refused, so they hit him, kicked him, threw his papers all around, and fought with ten other teachers as well. Finally the teacher knelt before the youths and apologized to avoid further confusion.[8]
- Ten percent of the nation's public middle schools request police guards for their graduation ceremonies.[9]

Other similar stories exist, but these are enough to make clear the awful, brutal world of youth and the failure of public schooling. This is an old story by now in the United States; but what you may not have anticipated as you read these clippings is that all of them are from the Japanese press describing incidents in Japanese schools (see Notes 1-9).

The evidence is quite clear that the Japanese public school system is a brutal and an enormous failure by most of the standards we as a nation have for schooling, save one, achievement in mathematics and science.

The Japanese system is one in which:

- Crude forms of cheating at the college level are rampant because there usually is no penalty for it.
- Parents pay teachers 'thank you' money for giving good grades and letters of recommendation to their children.
- A teacher was taunted by his colleagues for being too soft on students, so when a student on a field trip used a hair dryer—an act forbidden by the school—that teacher beat and kicked the student to death. At the trial the defense was that everyone at the school expected this teacher to use corporal punishment. This seemed perfectly reasonable to the judge, who was quite lenient in sentencing.

I became concerned about the possibility of erroneous information being disseminated by officials of our government when this same Japanese system of education was scrutinized by a team of visiting Americans, whose views were reported in the *Japan Times* (October 26, 1985) under the headline: "U.S. Educators Marvel at Japan's Schools." The then U.S. Assistant Secretary of Education, Chester Finn, a member of the study tour, said of the Japanese:

> They've demonstrated that you can have a coherent curriculum, high standards, good discipline, parental support, a professional teaching force and a well-run school. They have shown that the average student can learn a whole lot more. (*Washington Post*, October 19, 1985)

Herbert Walberg, a distinguished educational researcher, was on the visiting panel and concurred with Dr. Finn that much in the Japanese system could help to solve the problems of education in the United States stating, "I think it's portable. Gumption and willpower, that's the key (Washington Post, October 19, 1985)."

Knowing something about the Japanese system, I asked myself: Do we have the gumption and willpower to resist turning our schools into institutions where 26,000 junior high school students and 4,000 elementary school students refuse to go to school because they are tormented by teachers and bullied by students, and where 47,000 others miss at least fifty days of schooling per year because of the abuse they must face at school (*Chicago Tribune*, November 24, 1985)? Where the number of pleats allowed

in a girl's skirt is specified? Where students with curly hair are required to carry certificates attesting that their hair is not permed? Where some of the teachers at the middle school kick and beat the students regularly, in full view of other teachers. Where a Tokyo mother questioned the school system for allowing teachers to beat, kick, and drag her son around the school yard frequently over a three-year period, at times hammering his head against a goal post, and once throwing him in a garbage dump and jumping on him, because the student in question once skipped Sunday soccer practice to go fishing with a friend (see Schoolland, 1990, for additional examples and documentation).

I am pleased that there are no student offenses in the United States for which such cruelty on the part of teachers would be tolerated. But in Japan, over-regulation and harsh treatment of students is common. We certainly need "willpower and gumption" alright, but it is to resist a system that is at odds with our culture's humane and enlightened views of childhood and schooling. We certainly need the gumption and willpower to resist importing a system that has been recognized as a failure in Japan, according to their own prime minister and his council of advisors, who have said, "Bullying, suicides among school children, dropping out from school, increasing delinquency, violence both at home and at school, heated entrance exam races, overemphasis on scholastic ratings, and torture of children by some teachers are the result of the pathological mechanisms that have become established in Japan's educational system." (*Japan Times*, April 24, 1986).

I have a hundred criticisms of our school system and my list grows daily. I hope that we can improve our system, since public education in a vibrant dynamic democracy should never be considered finished. But reforms should be based on facts about the system and input from its practitioners. Reforms proposed by politicians, business leaders or other citizens should not be undertaken without reliable evidence or credible stories of experience to back them up. I was concerned that if so much nonsense could be spoken and written in the United States about the glories of the Japanese educational system, perhaps information being disseminated about the American system was also false. I began, therefore, to examine the validity of the criticisms made about our educational system.

Perhaps the criticisms are only partially true. Perhaps our public education is failing certain students and their families, but not others, and perhaps it is not even failing most of the students in the public schools. Perhaps Americans have been lied to, because when nations have economic difficulties or go through social change, their leaders look for scapegoats, and the American school system is a handy one. Perhaps we are changing into a plutocracy, where a wealthy elite chooses not to use the public schools, and participates in undermining confidence in that system so as to promote the conception of schooling as a commodity, to be bought like medicine, to be regarded as a privilege rather than a right of every American. Perhaps we are in a peculiarly American cycle, where every generation or so we like to play "kick-the-teacher."

In two articles I have specifically identified numerous examples of mis-interpretation and mis-information published about American public education (Berliner, 1993a, 1993b). What I found was a pattern of questionable facts and selective attention to detail.

The Children and Parents Served by the Public Schools

It was not difficult for me to find respectable data suggesting that the basic premises underlying contemporary thinking about school reform in the nation are faulty. It is not that the results I have found are "true," while the arguments of others are "false." And it is not that I am a defender of the status quo, for I am not. It is simply that there are numerous lines of evidence suggesting that the American public school system is not a failure.

I have seen that the charge suggesting that contemporary youth are not as smart as they used to be is debatable. They may, in fact, be smarter than they have ever been, at least as measured by the most well-respected intelligence tests that we have (Flynn, 1987) and by student performance in advanced placement courses and on the GRE (Carson, Huelskamp, & Woodall, 1991). Schooling seems to have made these achievements possible. On standardized tests, whether we use the SATs, the NAEP examinations, the Iowa Tests of Basic Skills, the California Achievement Test, the specially designed social studies tests of Drs. Ravitch and Finn, or many other standardized tests, we can find more evidence for increased achievement over time, or evidence for maintenance of achievement, than we can for a decline in achievement (Carson, Huelskamp, & Woodall, 1991; Linn, Graue, & Sanders, 1990). Educators should be given presidential citations for this accomplishment, since their success took place during the time period when the problems of the young people served by the public schools have become more difficult for the schools to solve.

The National Commission on Children (1991), chaired by Senator Rockefeller, makes this abundantly clear. For example, in 1970, 12 percent of our youth lived in one parent households. By 1989 that rate had more than doubled, to 25 percent. Over 17 million children under the age of thirteen have mothers working outside the home. Over eight million children under the age of 18 currently have no health coverage. Since 1980 no progress has been made in reducing the rate of low birth-weight babies, and for African-American babies that rate has actually risen. Public school teachers must nurture children whose families are poor, ill, and stressed. And the longer they remain in that state, the less hope those children have of it ever being different. According to federal definitions about 13 million youngsters live in poverty, two million more than just a decade ago. Five million of those children live in families with incomes half the amount the government sets as the poverty level. From 1976 to 1989 educators have been dealing with the emotional lives of children whose age group has seen a 259 percent increase in child abuse and neglect. In the early 1980s we had 275,000 youngsters in foster homes, by

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1995 we will have 550,000 in foster homes. The government informs us that our nation has up to 100,000 children under 16 who are actually homeless every night, and as many as one million adolescents each year who are throwaways or runaways, living on the streets, in cars or with friends (Foscarinis, 1991). Regardless of the nature or the severity of the problem, it is the public educational system that is called on to work with these children.

Educators worked with teenagers that, as a group, were 100 percent more likely to be murdered in 1989 than they were in 1965. Educators work today with African-American teenagers that are more likely to die of gunshot wounds than from all natural causes of death combined. From the 1960s to the 1970s, mostly among white adolescents, educators saw the suicide rate double, and then rise another 30 percent by the 1980s. While our black youth are getting shot at record levels, our white youth are killing themselves off at record levels.

During this time period the public schools of our nation seem to have maintained or increased their productivity. I wish industry were nearly as productive, adaptive and cost efficient. For the nation does not spend nearly enough on pre-primary, primary and secondary education as it professes to, and we have learned also that money spent for instructional purposes has direct effects on student achievement (Rasell & Mishel, 1990). This high achieving, productive, comparatively cheap system of education is producing all the technically able workers we need, and it has done so for years (Carson, Heulskamp, & Woodall, 1991). Our work force, though not our business leaders, seem to be among the most skilled in the world. And in the international comparisons of school achievement we have learned the remarkable fact that school children learn what schools choose to teach them, and that, conversely, they do not learn what schools do not teach. National systems of education have schools and curricula that reflect their visions of childhood and achievement. Comparative assessments, if they are any good, will show those national differences more clearly. On the other hand, we learn absolutely nothing that is not simple to predict when there is inadequate sampling, lack of control over the time spent preparing for the assessment, differences in opportunity to learn, and differences in motivation (for a discussion of this see Berliner, 1993a).

This American system of ours has performed so well that the majority of parents with students in public schools have been very satisfied with their children's teachers. Parents throughout the nation have been saying to the poll takers for fifty years that their local schools are pretty darn good. In one recent example of this, a nationally representative group of parents were asked how they rated the school attended by their oldest child (Elam, 1990). A startling 72 percent of the parents awarded that school the grade of A or B. Only two percent of the parents who have the greatest contact with the public schools thought the school their child attended deserved a grade of F. These data are relatively unchanged since the end of World War II.

Reform proposals before us recommending choice in schooling are based on a belief that the customer is dissatisfied with the schools and that the schools are failing to do their job. I can find no evidence that either is true when we look at the nation as a whole. Why then would so much be made of choice? Perhaps some people have noted that the public expenditures for education are large and it would be nice to get that budget into the private sector. Then education could be treated as a privilege, not a right, and it would ensure that children of wealthier segments of our population will inherit their positions. This is frightening.

I find it ironic that Total Quality Management (TQM), suggested by business leaders as a cure for supposedly ailing schools, requires constant assessment of customer satisfaction. We educators have done that and been found terrific by the parents who have children in the schools, our customers. Those who see the schools as a failure usually do not have children in the public schools. For example, the ever-critical Dr. Finn, whose daughter attended Exeter, says that the ordinary parents of the nation are not to be trusted with their opinions (Kozol, 1991). They haven't rigorous enough standards to make these kinds of judgments about the schools (Finn, 1991). People who find the general public unable to make intelligent judgments scare me. They are often part of a self-proclaimed elite that, for the good of the nation, will be pleased to tell each of us what we are to believe and how we are to act. I would much rather put my faith in the common people of the country, as messy as that can sometimes be.

The Critics

At least some of the criticism of the schools comes from an elite that is against public schooling. They need to be fought as they have had to be fought from the beginning of the crusade for public schooling (Cremin, 1989). There have always been those who never could believe in the intelligence of the common person, or they never wanted to share the advantages of education with common people. The late, wise historian of education, Lawrence Cremin, has remarked on this issue:

> ...social groups possessing a relatively rare and highly valued commodity that establishes their superiority over other social groups are reluctant to see that commodity more widely distributed. Wide distribution becomes tantamount to devaluation... (Cremin, 1989, p. 11)

Some of the criticism of education, however, is simple scapegoating. It is no longer fashionable in most social settings, and in the mainstream press, to blame the great economic and social tragedies of contemporary American life on the international Jewish conspiracy, or on the lack of motivation or talent of African-American, Polish-American or Mexican-American workers. The greedy union bosses and the welfare queens cannot be blamed anymore since we no longer have strong unions, and the amounts spent on welfare are small potatoes compared to the amounts we used to bail out the savings and loan companies. The S&L robbery of the American people was perpetrated by

nice, middle-class, well-educated, religious white men from two-parent households, the kind of Americans who wouldn't possibly want to hurt their nation. But blame for society's ills, of which there seem so many, needs to be assigned somewhere. And there was one ordinarily passive, relatively defensless group available. From 1983 on, this nation has been told relentlessly by its leaders that we are a nation at risk because our schools and our teachers have failed us. But the truth, I think, is that those leaders have failed the schools and the teachers of America. Rather than lead us to ruin, the vast majority of teachers have run a system that is remarkably good for the relatively advantaged children of America. The teachers in the schools with the least support, serving children who need the most help, are indeed, having a harder time. Those schools may be failing, but the causes for that are usually outside the school building. Those causes are embedded in the social inequities prevalent in our society.

It is easy to use the schools as a scapegoat. It has been a traditional American pastime. For example, in 1909 the *Atlantic Monthly* criticized the schools for (a) not teaching enough knowledge, (b) not teaching thinking skills, and (c) not preparing young people for jobs. These laments are still current ninety years later and seem to have been current since public schooling began in the United States of America. The *Ladies Home Journal* of 1912 has always been my favorite. There Ella Francis Lynch criticized the schools because life in America had changed and the schools had not changed with them, another old criticism still current. That year the *Journal* also pointed out to their readers that the tests and the grades given in schools were ruining our nation, another contemporary theme.

Let us jump ahead to the 1946 *Ladies Home Journal*, where it was reported that teachers were inadequately trained to meet the needs of the baby boomers; where poor pay was rampant; where there were discrepancies in schooling based upon geography, income and class; where there were no standards anymore; and where indifference to the schools by parents was rampant (this discussion is adapted from Kent, 1987). *Time* magazine in 1949 charged that the schools were failing to teach traditional subject matter because it was too concerned with life adjustment education. The year 1951 seemed a particularly good year for criticism (Kent, 1987), though most people think of that time period as among those halcyon days of yore.

In 1953, we saw publication of Arthur Bestor's *Educational Wastelands: The Retreat from Learning in our Public Schools* and Albert Lynd's best-selling *Quackery in the Public Schools*. In the late 1950s we saw Hyman Rickover rip the schools, for they were endangering the nation. In the *Saturday Evening Post* a captain of a missile site reported that the draftees he received were unable to read, write or do simple arithmetic, and that he was getting the best of the recruits! *Life* magazine of 1958 said we were paying too much attention to "stupid children" and not enough to the gifted—that we simply had to set higher standards. Familiar laments, all.

And the business community was in on the criticisms then, as it is today (see Rippa, 1988). While celebrating the first quarter century of the National Association of Manufacturers (NAM), the treasurer in 1920 was applauded vigorously when he said

> I live in a manufacturing town.... We are going to spend over a million dollars for a high school to teach the children of the working people of that town... The expenditure that is now being made [for the public school system], and the laws that are being passed for its expenditure are as absolutely a waste as though it were thrown into the gutter (Rippa, 1988, p. 142).

In 1927 the chairman of the NAM education committee told the businessmen of the Association that

> Forty percent of high school graduates haven't a command of simple arithmetic, cannot multiply, subtract, and divide correctly in simple numbers and fractions. Over forty percent of them cannot accurately express themselves in the English language or cannot write in their mother tongue (Rippa, 1988, p. 143).

It sounds so familiar. And this was when only a small elite finished high school. I wonder how the nation survived? Furthermore, decades before the lectures about Total Quality Management were offered to the schools by our business community, a community that by and large has failed to keep America economically strong, business executives also felt it necessary to lecture educators. The spokesperson for the National Association of Manufacturers informed the schools of his day about the marvels of management in that day, claiming that "the public schools should be systematized, thoroughly, comprehensively, and with the sole view of utmost efficiency; efficiency in every direction, to the last degree, and for the last child" (Rippa, 1988, p. 141). It should be clear by now that for the business community and the general citizenry of our nation the games of kick-the-teacher and dump-on-the-schools have a long history. Along with baseball, it seems to be our national pastime.

Conclusion

So what shall we make of all this? The data suggesting the gross failure of the American school system simply does not hold up. There has been a campaign of disinformation. As Clark Kerr noted "seldom in the course of policy making in the U.S. have so many firm convictions held by so many been based on so little convincing proof" (*Education Week*, 2/27/91). A school reform movement based on so many invalid assumptions is bound to be wrongheaded. Some of the school reform efforts are thinly disguised elitist attempts to get rid of public education, to protect the privilege such individuals have already bestowed on their

(continued on page 6)

children. After all, the greater the disparities in schooling, the greater the assurance that the privileged have someone to mow their lawns, to wait at their tables and care for their children. The reforms they offer—higher standards, a tougher curriculum, more tests, with no increase in spending, will ensure that the children of New Trier High School, near Chicago, and the children of Princeton, New Jersey, and the children of Manhasset, New York, will succeed even more than they do today. The children at P.S. 79 in the Bronx, New York, will fail at even greater rates than they do today. Children at P.S. 79 and similar schools in Los Angeles, California; Camden, New Jersey; Detroit, Michigan; and San Antonio, Texas—schools described so poignantly by Jonathan Kozol—do not have textbooks for their students, are forced to hold some of their classes in closets, teach word processing skills without any word processors, teach science without laboratories, conduct physical education and art classes without proper equipment. These are schools that cannot regulate heating or cooling or keep out the rain. Their teachers are often those rejected by the wealthier suburbs, and large percentages of their classes are taught by uncertified people.

Reforms of the kind being proposed will exacerbate the differences between the have and the have-not school districts. The haves are already doing quite well. Those children of privilege are attending decent schools, achieving well, scoring well on standardized tests, graduating high school, and going to college. They are the smartest and healthiest generation America has ever produced. There really is not much to reform for these kids, since their schools are not failing, at least by the traditional measures we use to assess such things. On the other hand, I see nothing in America 2000, and the new schools that are to break-the-mold, that will address the social issues causing parts of our nation's school system to be in ruin.

Instead of President Bush's goals for year 2000, let me suggest some that address the real failures of our schools more directly. First, let us agree with our former education President that all children should come to school ready to learn. Let us therefore provide high quality day care and preschool to all American children, and ensure that they and their families have the finest health care in the world. This is how we can ensure that they will come to school ready to profit.

Second, let us choose to have safe schools. But let us go on to guarantee every child a school where plumbing works, where toilet paper and chalk are available, where heating and cooling systems are operational, where the rain does not run into the school building, and, where the plaster is not falling. Let us guarantee each child access to current textbooks, computers, and science laboratories, and provide children who are eligible the bilingual education to which they are legally entitled. Maybe we could just guarantee that every child in America shall have a certified teacher who knows their name and their family.

Third, by the year 2000 we should be number one in the world in the percentage of 18-year-olds that are politically and socially involved. Far more important than our mathematics and our science scores is the involvement of the next generation in maintaining our democracy and helping those within it that need assistance—the young, the ill, the old, the retarded, the illiterate, the hungry and the homeless. Schools that cannot turn out politically active and socially helpful citizens should be identified, and their rates of failure announced in the newspaper.

Fourth, by the year 2000 we should strive to make the American teacher the highest paid in the world. Here is where we should emulate the Japanese. We should pay our teachers what they pay theirs. This would mean our teachers would earn 10 percent more than whatever the top-level civil servant earns in the service of government. This would purchase and keep the talent needed to give our students the best schooling in the world.

Fifth, we should equalize the funding of schooling, so that schools in one part of the state or even within a district, cannot spend twice or three times more per-child per-year than other schools in the state. The parents of Grosse Pointe and Great Neck and Princeton should inform the state legislatures what it takes to educate their children properly, and that standard of support should be applied to every district in the state.

It is my belief that the American school system, as a whole, has been and continues to be a remarkable success. The campaign to discredit it and to blame it for the ills of our nation, leads inevitably to making the wrong decisions about what to fix. Greater school improvement will come from providing poor people with jobs that pay enough to allow them to live with dignity, than from all the fooling around we can do with curriculum and instruction, or with standards and tests. Children who are poor, unhealthy, and from families and neighborhoods that are dysfunctional do not do well in schools. Educators cannot work miracles. Children from families that have some hope, some income and some health care have a chance. Families with those characteristics are in less stress and they take control of their neighborhoods. P.S. 79, on 181st Street in the Bronx is a neighborhood elementary school that is failing, and it was not always that way. When people in the tenements around that school had hope, that ugly school for the working classes was remarkably successful. I know. It is the school I attended in the neighborhood in which I grew up.

Educators must now speak up. It is time for us to inform the politicians and business leaders of America that we cannot solve all the problems that they are creating. We will no longer take the blame for their actions. All of us in this nation must find ways to help each family live with dignity, so those families can give their children hope. Education is irrelevant to those without hope, and succeeds remarkably well for those who have it.

Notes

[1] "Youth Crime up 100 percent over 1976," *Japan Times*, 8/23/87.

[2] "Number of minors taken into custody for prostitution increases dramatically," *Japan Times*, 1/30/86.

[3] *Schoolland, Shoguns Ghost: The Dark Side of Japanese Education*, 1990, p. 121.

[4] *Schoolland, Shoguns Ghost: The Dark Side of Japanese Education*, 1990, p. 121.

[5] *Schoolland, Shoguns Ghost: The Dark Side of Japanese Education*, 1990, p. 122.

[6] "Tokyo police report case of bullying," *Japan Times*, 11/20/85.

[7] Stanglin, D. "Japan's Blackboard Jungle," *Newsweek*, 7/1/85.

[8] "8 junior high thugs attack 10 teachers," *Japan Times*, 3/26/86; "8 angry students hurt 10 teachers," *Daily Yomiui*, 3/2/86.

[9] *Schoolland, Shoguns Ghost: The Dark Side of Japanese Education*, 1990, p. 179.

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The Effects of a School-University Collaborative Change Project on Teacher Behaviors: A Case Study

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Abstract

This is a case study of the effects on the behaviors of those teachers who were selected to reform an urban, inner-city elementary school from within during the first year of implementation. Using field notes gathered from weekly staff meetings, small group meetings, structured interviews and document analyses, researchers in this project found that when given the opportunity for school-based restructuring, teachers pursued teaching practices not previously contained in their teaching repertoire; assumed responsibility for their professional development; became interested in examining their practice and supporting it with documentation; developed direction and commitment to agreed-upon school goals; engaged in collaborative efforts with varying constituencies to accomplish school goals; and questioned district-wide practice in light of their understanding of teaching and learning.

During the decade of the 1980s, school improvement efforts typically focused on accountability, and projects were initiated, monitored and evaluated from the top down (Lieberman & Miller, 1986). Such efforts often featured new instructional programs, new texts or curriculum improvements which were developed by policymakers and researchers and directed to teachers to implement. Most of these reform projects found little acceptance from classroom teachers because such efforts failed to take into account the complexities of the teaching/learning process, and they did very little to improve the conditions of teaching (Goodlad, 1984; Lieberman & Miller, 1986; Sarason, 1982).

More recently, however, school improvement literature has begun to call for teacher empowerment accomplished by restructuring schools as well as rethinking the roles teachers play in schools (Holmes Group, 1986; McCarthy & Peterson, 1989).

According to current reform literature, in order for change initiatives to be effective, they must be shaped by practitioners and guided by craft wisdom. Teachers are being asked to move into interactive, dynamic roles (David, 1989) and to collaborate with other educators in site-based decision making. They are being empowered to redesign the work teachers do in schools and to utilize scarce resources differently than they have in the past. They are being called upon to improve the teaching/learning process (Murphy, 1990).

In contrast to earlier reform movements which tried to cause teachers to adopt specific intructional models, many of today's initiatives attempt to capitalize on the energy and the creativity of individuals within the school to bring about meaningful change and to include the participation and ongoing support of other educators within as well as outside the school (Lieberman & Miller, 1986).

While collaboration within schools has begun to show some success, evidence of successful school-university collaboration to bring about school improvement is practically non-existent (Smith, 1992). Case reports seem to be the most common evidence in the literature (Binke & Neubert, 1984; Carter, 1988; Clift, Veal, Johnson & Holland, 1990; Cochran-Smith, 1991; Molner, 1988; Penick & Yager, 1988-89; Takacs & McArdle, 1984; Williams, 1988). Most of these case reports present school-university collaborations from the perspective of the university-based faculty, and they tend to focus on desired outcomes of the innovation. Few studies in the literature, however, speak to the initiation and the maintenance of the collaboration or provide empirical evidence of program effectiveness (Smith, 1992).

As Goodlad (1988) concluded:

> The history of school-university collaboration is not so much, then, replete with failure as it is short on examples of carefully crafted agreements and programs accompanied by the ingredient considered by Clark (1986) to be essential for success-namely individual and institutional commitment on both sides. In short, the joining of schools (and school districts) and universities in commonly purposive and mutually beneficial linkages is a virtually untried and therefore, unstudied phenomenon. (p. 12).

Purpose of Study

The professional development work of one school which came about because of the collaborative effort of a school district and a college of education in Northeast Ohio was studied. The focus was on the overarching question, "How might the behaviors of the teachers selected for such a collaborative improvement project be affected by an opportunity to reform a school from within?"

This research effort was based on the assumptions that the only meaningful reform begins with those who inhabit the school and that such efforts can only be sustained in the long term by means of a strong partnership between public schools and higher education institutions.

Considerations That Frame the Study

The focus of this one-year study was a multicultural, highly mobile, low SES school located in inner-city Akron, Ohio.

Prompted by past successful school-university collaborative efforts, the administration of the school district, the Akron Education Association and the College of Education at Kent State University, entered into an agreement to designate a professional development school. Elementary teachers from the 33,000 student school system were invited to apply and were screened by a team composed of Akron teachers and administrators.

As a result of the selection process held in 1989-90, eight applicants (fifteen applicants applied) were selected to join the existing subject area specialists and faculty who opted to remain at the school site.

It was understood by the participants, who were asked to make a three-year commitment to the project, that they would teach for two and conduct action research in the school for one of the three years. During the first year four of the newly selected teachers were assigned to classrooms and the other four were assigned to an action research team.

At the close of a three-day orientation which was held prior to the initiation of the project, the original group of eight teachers chose several goals for the 1989-90 school year: (1) to implement an interdisciplinary reading program; (2) to design a collaborative curriculum development process; (3) to focus their professional development that year on skill building related to decision making, conflict resolution, and group work; (4) to initiate an action research process enabling the staff to reflect upon their professional practice and to begin to build a body of useful knowledge about the teaching/learning process.

Method

Participants and Data Collection

During the Spring of 1989—prior to the project's start-up date in the Fall of 1989—teacher position listings for the targeted school reform were posted for district-wide elementary school teachers' consideration. The position listing included a call for teachers who had the skills and dispositions to (1) develop and demonstrate alternative methods for delivering educational services, (2) provide leadership in program development, staff development, and action research, and (3) develop and demonstrate superior teaching strategies for the education of the district's children. A selection committee, consisting of district administrators, union representatives, and classroom teachers, screened applicants who were asked to submit a videotape of their teaching, complete a questionnaire, submit references, and were subsequently interviewed. Eight teachers from a pool of 15 years of teaching experience, were selected to participate in this project.

Throughout the 1989-90 school year, data gathering using a case study approach was incorporated in this study. Principle data gathering mechanisms consisted of extensive field notes focusing primarily upon weekly staff meetings (30 meetings, approximately an hour long); small group informal meetings (two or more project teachers—45 field-noted meetings); and, structured interviews at the beginning, middle and end of the school year (24 interviews). A sample of the interview questions follows:

- Why did you choose to be a part of the Demonstration School project?
- What skills do you feel you will gain or strengthen as a result of this project?
- Have you done "things" differently this year than previous years?
- Identify and describe some of the projects/activities that you have been involved in?
- My biggest accomplishment this year has been…
- My biggest regret this year has been…

The interviews were audiotaped and later transcribed for analysis. Document analysis of written products also took place (e.g., school goals, curriculum development products, grant applications).

Two researchers, a university college of education faculty member and a doctoral student, collected the data and were also quasi-participant observers in their dual roles of providing documentation and support for the project.

Data Analysis

The phenomenological approach, involving case study research within a naturalistic setting, promoted by Guba and Lincoln (1983; Lincoln & Guba, 1985), established a preliminary procedural basis for initial data analysis that targeted key events and phenomena (staff meetings, informal meetings, structured interviews, and document analysis). Data were first collected broadly and then based on concurrent analysis (Miles & Huberman, 1984). The scope of the data was then reduced so that its length could be increased through domain analysis and inductive categorization processes (Spradley, 1979).

Data from the staff meetings, informal meetings, structured interviews, and document analysis were then organized topically and scanned for regulations and patterns resulting in subsequent categories. Six key categories—curriculum restructuring, professional development deliberation, teacher inquiry, project vision, collaboration, and teacher reflection—emerged from constant comparative examination of the data and are reported in the subsequent results section.

For example, during the first month of the project, teachers decided to meet weekly to discuss innovative project activities for the upcoming year. From these informal meetings, field notes (taken by one of the researchers) were recorded. Specific activities were discussed, written about, and key elements of the discussion/writings emerged from the data through subsequent ethnographic analysis.

(continued on page 10)

Effects on Behavior *(continued)*

Results

Finding One: *When given the opportunity for school-based curricular and pedagogic restructuring, teachers pursued teaching practices not previously contained in their teaching repertoire.*

Several examples of school-wide collaborative efforts were attempted during the first year of the project. For example, thematic teaching was embraced by all the teachers and highlighted by means of multi-age, cross-grade groupings focusing on quarterly units. One thematic unit on "families" enabled students to choose areas of interest and explore them with teachers and other same-age and cross-age students in which students and teachers shared responsibilities for teaching and learning. One component of this unit, "Families in Literature," provided students and teachers with the opportunity to examine specific interest areas related to this topic and later present their findings to other groups.

Teachers collaborated with each other to develop and implement units for study. Such cooperative planning and teaching had been totally alien to the teachers prior to this experience.

Yet another example of curricular and pedagogic restructuring centered upon the use of whole language and child-centered learning. Each of the teachers had some experience with these two practices and philosophical orientations but admitted to having only a limited understanding and ability to apply the teaching strategies supportive of whole language and child-centered learning.

One of the teachers related:

> Being here, I've been able to put a lot of things together. I was able to kinda struggle through and use whole language this past year and make mistakes with it and come away this year with a better grasp of it. I was able to use a lot of cooperative learning (child-centered emphasis) in the classroom this year. I didn't feel like the time that I spent on cooperative learning was really taking away from other subjects. I was able to go to a workshop on cooperative learning…and I think the kids are ready to go. I just hope next year they get someone who will carry that on.

Project teachers were willing to take risks in their teaching practice because the school environment not only tolerated such activity, groups of teachers promoted such teaching practice which challenged the conventional norms associated with teaching as an isolated teacher directed activity.

Assuming that teacher knowledge and skills are related to productive learning environments, fostering the expansion of knowledge and skills in a supportive environment enhances teacher and students' learning. By encouraging experimentation such as thematic teaching, whole language, and child-centered learning, teachers were able to raise questions about conventional practice. By critically examining and evaluating their learning by doing, teachers were able to confront their old beliefs with new beliefs about professional practice.

Finding Two: *Teachers assumed responsibility for their own professional development.*

Although project teachers took advantage of the inservice opportunities provided by the school system, early on they took responsibility for the planned site-based professional development related to their established needs.

During September of the first year, a school-wide staff development needs assessment (Target Area Survey) was distributed and completed by the project staff. Survey responses were ranked and a committee was charged with the task to develop and implement professional development strategies. "Mom's Meetings" (Meeting of the Minds) were initiated which consisted of tri-weekly afternoon sessions (substitute teachers were provided) that focused on specific curriculum development or teaching strategies including portfolio assessment, whole language, grant writing, curriculum integration, and action research. The Mom's Meetings enabled lengthy discussion and consideration of chosen topics for current reflection and the opportunity for follow-up and refocus for future meetings. "Recipe Luncheons" consisted of bi-weekly sharing of teaching practices over lunch at a nearby restaurant. The Recipe Luncheons were quick, often how-to, approaches to teaching that the project teachers had successfully used in the past or had experimented with more recently. The Recipe Luncheons gave the staff ample opportunity to share promising practices that either were occurring or could occur at the school.

Teachers throughout the first year shared the knowledge and skills they had gleaned from workshops, conferences, professional readings, college courses, and other resource people.

A professional library was established with books on loan from the central office. Other professional resources were also purchased throughout the year from a professional development budget controlled by the project staff.

Finding Three: *Teachers became interested in examining their own practice and supporting it with documentation.*

The teachers were introduced to action research at the Mom's Meetings and several of the staff individually and collaboratively engaged in responding to questions about their teaching practices. For example, two of the teachers focused on the action research question, "What effect will a whole language/integrated curricular approach have upon a first/second grade combination class?" In their attempt to answer the question, the two teachers kept a reaction journal, an activities log, and interviewed the children periodically throughout the academic year.

Teachers also began to engage in grantsmanship. Only two of the staff had had any previous experience in such an endeavor. Several grant writing projects took place that first year that targeted local, state and national funding sources. With the assistance of a Kent State University faculty member, grants were written which focused on the documentation of project activity and funds for curricular innovation through school-based reform initiatives.

Finding Four: *Teachers developed direction and commitment to agreed-upon school goals.*

Effects on Behavior *(continued)*

A mission statement and a set of school-wide goals for the project school were developed early in the school year and reviewed at the end of year one. The staff emphasized in their statement that the mission of the school was "to ensure that no one struggles alone." Borrowing from Lieberman, Saxl and Miles (1988), teachers were asked to commit themselves to (1) trust and rapport building, (2) the diagnosis of the school's organizational and instructional needs, (3) work with the process of teaching and learning, (4) utilize whatever resources were available to them, (5) collectively manage the work load, and (6) build skill and confidence in others.

Parents who had children in the project school were asked to (1) understand the academic goals of the school and (2) support their children's and teacher's efforts to reach those goals.

The students in the project school were asked to (1) come prepared to learn, (2) respect themselves and others, (3) respect other people's property, and (4) ask for help when they needed it.

The goals of the project school staff were indicative of their shared vision for the school. Such goals included (1) integrating the curriculum thematically across grade and ability levels, (2) giving students a positive outlook on learning and encouraging them to attain a positive self-concept, (3) increasing parental involvement in the school and the education of their children, (4) encouraging full staff participation in and support for programs and changes, and, (5) providing the time during the work day for teachers to meet professionally.

Both the mission statement and the goals statement suggest a school-wide responsibility for internal control that might result in a divergence of practice compared to external control and uniformity of practice. Since both statements were developed by the staff, ownership and professional commitment to the combined statements would appear to be forthcoming. This belief was reflected in the following teacher's comments:

> I think that the first meeting we had outside of school last week was probably one of the most productive things I've done in education. And, we sat down for four hours and we were very task-oriented, and we were there to hash out things (the mission and goals statements). I think that we got into some real nitty-gritties. I think some people were uncomfortable from time to time…But, I think as we questioned and other people started sharing ideas, and we learned to listen to each other, and it was exhausting…So that I felt it was one of the best experiences I've had. As a classroom teacher, I've never had that kind of meeting. Ever. That's said.

Finding Five: *Teachers will engage in collaborative efforts with varying constituencies to accomplish school-wide goals.*

Lortie (1975) and others have noted that teaching practice is often an isolated endeavor and that teachers do not have extended opportunities to professionally interact with each other or other groups.

The teachers in this project believed that there were resources and support systems beyond the confines of their school that would benefit teaching and learning at their school. Several first-year projects were initiated that engaged groups in varying degrees of collaborative activity.

A "Partners and Pals" program, for example, involved community members who periodically correspnded and visited with the children. A grant involving a local children's hospital to provide a computerized instructional hook-up between children with extended illnesses and the school children was developed by the staff.

A family literacy program cosponsored by the school staff and Kent State University was implemented. High school students from a nearby private school were involved with a tutorial program for the project school students.

Each of the projects was initiated by groups of project teachers who took responsibility for facilitating the activities and reporting back the results to the school staff.

Finding Six: *In varying degrees teachers questioned district-wide teaching practices, and often in their conversations displayed dispositions towards examination of actual teaching practice and the beliefs that drive such practice.*

The questioning of district-wide teaching practices created a tension and a sense of ambiguity that was disconcerting at best and at times dysfunctional among the teachers. The following teacher comment suggests a strong desire not to readily accept certain teaching practices (and the implied beliefs) in light of the teacher's own understanding of the teaching/learning process:

> Direct instruction…that's the thing that bothers me about some of the effective schools (district emphasis). You know, it's always direct instruction, direct instruction. I think there's a place for direct instruction, and I know some principals that have gone overboard. You know, they want the teacher up in front of the class almost every minute of the day. And that really bothers me because I think that a lot goes on sometimes when there's little groups working and I'm back there with another group, when I'm flitting around, that kind of thing, and I don't want to see people thinking it's the teacher giving that knowledge all the time. And so I think that's really dangerous to education. I think then they put up the teacher as sort of the knowledge broker, then we really get into some really detrimental kinds of learning going on…you get very little learning. You're pouring it into their heads, you're the giver of information, and I think that kids really do need to realize there's a lot inside them. And they have a lot of ways of finding out what they want to know, and they can ask their own questions, too,… it's okay! And time on task, you know. I finally said to a principal, you know, what do you mean by "time on-task? I can have the kids copy out of the encyclopedia every minute, and they'd be on task. Are we talking about

(continued on page 12)

Effects on Behavior *(continued)*

> ...you know, what kind of time on task are we talking about? I want my kids to be in productive learning. On the other hand, my room isn't always going to be quiet.

It would appear that one sign of a professional would be to question one's field of professional practice and be able to support one's own practice based on current knowledge of the professional field. Teachers in the project intuitively understood this as they collectively tried to expand upon, "What works best for our school?" through the process of immersing themselves in the professional literature and the body of knowledge they began to build from an ongoing reflection of their own professional practice.

Conclusion/Discussion

In the first year of this venture, it became obvious that when given the opportunity to restructure their curricular and pedagogic paradigms with the nurturing and support required of such an undertaking, teachers will begin to pursue teaching/learning practices not previously in their repertoire. An environment of supportive "risk-taking" became apparent as individual and groups of project teachers initiated, planned, developed and delivered educational services in a manner not previously considered in their past teaching years. A sense of ownership and empowerment was fostered in a collegial manner resulting in curriculum and pedagogic changes. Furthermore, professional development became more site-specific and consciously planned to benefit both individual and collective needs of project teachers. Collaboration, not teacher isolation; a school-wide focus, not just individual classroom focus; and professional accountability through the need for documentation materialized as project teachers engaged and stuggled with the many problems and concerns of an urban inner-city elementary school. Through teacher ownership and empowerment, a group of teachers appeared capable to rethink and make initial attempts at reforming educational practice at the school level. This bottom-up approach, built upon teacher empowerment and craft wisdom, promotes a different means for educational reform than years past. The study of such reform enables insight into the complexity of such efforts as well as providing a means to capture educational reform from the perspective of teachers.

Although we have attempted to address the question of what effects such a collaborative improvement project might have on teacher behaviors, it is important to caution the reader that this is a one-year study and that the participants chose to become involved, thus introducing the impact of selectivity.

However, these limitations can and should be addressed by replications of this case study. Such studies are under way and, when published, should add to the growing literature on the effects of collaboration within as well as between institutions.

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AERA Meeting Participants' Ratings of Journals in Their Disciplines

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Abstract

AERA meeting participants were surveyed regarding the relative quality/prestige of various journals in their respective disciplines. Subjects were asked to "rank those journals that you consider to be among the top ten in your discipline…[those] which you would *most* like to be published in and/or those in which you expect to find information *important* to you as an educator and/or researcher." Demographic data, listings of the top five journals for AERA Divisions A-K, and an overall list of the top 10 based on the 572 respondents, are provided.

In 1978, Luce and Johnson published a survey in the *Educational Researcher* entitled "Rating of Educational and Psychological Journals." This survey asked AERA members in the various divisions (seven at that time) to "…list…those journals that you consider to be among the top 10; in other words, those journals in which you would most like to be published and/or those in which you expect to find material important to you as an educator (p. 8)." Results were reported in tabular form, listing the top 10 journals for each division, and for other demographic categories. Luce and Johnson suggested that their empirical findings regarding journal quality would serve as useful information for researchers, journal readers, and for "administrators who are confronted with the task of evaluating the quality of journal publications, oftentimes in disciplines foreign to them (p. 8)."

Given the passage of time, and the rapid growth of new journals in the interim, we wondered what changes might have taken place since 1978. To answer that question, we conducted a similar survey of AERA participants in November of 1990. Our results list demographic data, the top five journals for each of the 11 AERA divisions, and an overall ranking of the top 10 based on the 572 total respondents to our survey.

Method

Sample

Subjects were randomly selected from the "Address Directory of Presenters" in the back of the *1990 AERA Annual Meeting Program*. Each presenter had a .6 chance of being selected. Our reasoning in choosing this sample was twofold. First, addresses listed in the back of the 1990 program were relatively current. Second, the resultant ratings should reflect the judgments of persons active in the organization. For reasons of economy, we excluded individuals having international addresses, and consequently mailed out 1,941 questionnaires. This number represented 54 percent of the approximately 3,600 AERA meeting presenters in 1990, and 11 percent of the 17,111 total AERA members. It is interesting to note that, as of this writing (February 1993), the AERA national office is reporting current membership at 19,700.

Because our sample was limited to those persons listed as presenters at the 1990 AERA meeting, it would tend to reflect the judgments of active AERA members. It is possible that active members may favor particular journals over those members who are inactive or are infrequent contributors to AERA meetings.

Materials and Procedure

A cover letter described the nature of the study. In order to replicate their survey, directions regarding the ranking procedure paralleled those provided by Luce and Johnson (1978), as follows:

> Please rank, from the list below, those journals that you consider to be among the top ten in your discipline. In other words, rank those journals in which you would *most* like to be published and/or those in which you expect to find material *important* to you as an educator/researcher. Indicate your ranking on the blank adjacent to the journal title using a number 1 next to the journal which you consider the best, 2 next to the journal you consider second best, and so on, until you have ranked 10 journals. If journals that you consider to be among the top 10 are not listed, enter the title(s) on the blank lines at the bottom of the questionnaire, and rank using the above criteria. Please return your survey promptly to us in the stamped, pre-addressed envelope.

Similar to Luce and Johnson (1978), we provided a list of 225 journals on the back of the rating form—but stressed that respondent's choices should not be limited to that list. This listing was generated via textbooks (e.g., Best, 1981), previous research (e.g., Koulack & Kesselman 1975; Luce & Johnson, 1978), and informal surveys of education and psychology faculty members at a midwestern institution. The latter approach served to add journals to the list which have been initiated since 1978. Respondents were asked to verify AERA membership, to identify principle divisional affiliation, work setting, and to indicate whether

they considered themselves more active in education or psychology. Survey materials, including a postage paid business reply envelope, were assembled and mailed at the end of November 1990.

Results

Of 1,941 questionnaires mailed, 586 (30.1 percent) were returned. The mid-December due date unfortunately coincided with a very busy time for most AERA members. And again, for reasons of economy, we were unable to send a reminder to those who did not respond. Thus, our return rate was lower than we had hoped. Of the 586 returned, 572 (29.5 percent) were usable (i.e., respondents identified divisional memberships, ranked journals, etc.). Among usable surveys, 538 of the respondents indicated AERA membership, and 34 were nonmembers—hence the term AERA "participants." Demographic data comparing our survey participants with total AERA membership characteristics are provided in Tables 1 and 2.

Rating results are summarized into listings of the top five journals by divisional affiliation, as well as an overall ranking of the top 10 (see Table 3). Since rankings at the divisional level were based on smaller *n*s, we elected to list the top five journals for each division instead of the top 10. Respondents sometimes listed more than one principle divisional affiliation. In those instances, their choices were tallied for *each* of the divisions they identified. Thus, the sum of the *n*s across the divisions is greater than the 572 total respondents.

Table 1

Comparison of Survey Sample to Actual Membership of AERA in 1990.

Characteristic	Percent of 572 Survey Respondents	Percent of Total AERA Membership
University Work Setting	76	70
Primary Discipline		
Education	85	67
Psychology	10	17
Responsibility		
Teaching	39	34
Research	34	22
Mgmt./Admin.	12	18
Degree		
Ph.D./Ed.D.	76	73
Master's	6	23

Note: AERA percents above are based on data published in *Educational Researcher* (AERA Staff, 1990).

Table 2

Comparison per Division of Survey Respondents to Actual Percentage of AERA Members in December of 1990.

Division	Percent of 572 Survey Respondents	Percent of 17,111 AERA Members
A = Administration (n = 70)	12	16
B = Curriculum Studies (n = 66)	12	16
C = Learning & Instruction (n = 176)	31	36
D = Measurement & Research (n = 126)	22	25
E = Counseling & Human Development. (n = 37)	6	9
F = History (n = 25)	4	4
G = Social Context (n = 86)	15	14
H = School Evaluation & Program Development (n = 63)	11	15
I = Education in the Professions (n = 30)	5	6
J = Postsecondary Education (n = 53)	9	9
K = Teacher Education (n = 142)	25	22

Note: The source for AERA divisional membership data was the AERA Membership Tally for December of 1990.

Discussion

Tacit knowledge exists among researchers regarding the relative importance of various journals in their disciplines. The purpose of this survey was to produce current, empirically-based rankings of journals based on a sample of individuals who had participated in the 1990 AERA meeting. Although there has been a proliferation of new journals during the past two decades, many of the major journals of the late 1970s appear to be "holding their own" in the early 1990s. For example, regarding the overall rankings (see Table 3), seven of the top 10 journals are the same as those listed by Luce and Johnson in 1978: *American Educational Research Journal (AERJ), Review of Educational Research (RER), Harvard Educational Review (HER), Phi Delta Kappan (PDK), Educational Researcher (ER), Journal of Educational Psychology (JEP),* and *Journal of Educational Measurement (JEM).* The presence of AERA publications *AERJ, RER,* and *ER* at or near the top of the list is not surprising, but at least confirms the hope that AERA members think highly of their organization's publications. Broad-based journals such as *HER* and *PDK,* while not published by AERA, drew a good deal of support from survey participants—as did APA's *JEP* and NCME's *JEM.* Journals new to the list were Teacher's College Record, Educational Leadership, and AERA's Educational Evaluation and Policy Analysis.

While an examination of Table 3 reveals generally strong support across the board for the top 10 journals, it is perhaps more meaningful to examine journal rankings division by division. For example, members of Divisions I and J, which represent more specialized area within education (e.g., medical education, post-secondary education), identified more specialized journals. Health and medical education journals were highly rated within Division I, while journals concerned with higher education issues, practices, and research were more valuable to

(continued on page 16)

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Journal Ratings (continued)

Table 3

Percent (and Ranking) for the Top 10 Journals Overall, and the Top 5 for Each Division

Journal	Overall	Divisions										
		A	B	C	D	E	F	G	H	I	J	K
Amer. Ed. Research J.	49(1)	50(5)	50(1)	70(1)	49(3)	59(1)	36(4)	44(3)	60(1)		43(3)	62(1)
Review of Ed. Research	45(2)		48(2)	61(2)	52(2)	51(3)			52(3)	60(1)		57(2)
Harvard Ed. Review	33(3)	51(3)	47(3)				68(1)	63(1)	46(5)		42(4)	49(3)
Ed. Researcher	32(4)		47(3)	33(4)			32(5)	42(5)				46(5)
Phi Delta Kappan	29(5)	63(1)						44(3)	56(2)			46(5)
Journal of Ed. Psych	23(6)			52(3)		41(4)						
Teacher's College Record	21(7)		41(5)				56(3)	45(2)				
Educational Leadership	17(8)											
Ed. Eval. & Pol. Analysis	17(9)	51(3)							49(4)			
Journal of Ed. Meas.	15(10)				61(1)					30(5)		
Educ. Admin. Quarterly		59(2)										
Journal of Teacher Ed.												49(3)
Cognition & Instruction				33(4)								
J. of Ed. Statistics					41(4)							
Psychological Bulletin					37(5)							
Child Development						59(1)						
Developmental Psych.						41(4)						
History of Ed. Quarterly							64(2)					
Academic Medicine										53(2)		
Eval. & Health Professions										53(2)		
Teach. & Learn. in Medicine										37(4)		
Research in Higher Ed.											55(1)	
Journal of Higher Ed.											47(2)	
Review of Higher Ed.											42(4)	

Note: **Boldprint** = AERA publication. Overall n = 572. Ns for divisions are as follows:

A = Administration (n = 70)
B = Curriculum Studies (n = 66)
C = Learning & Instruction (n = 176)
D = Measurement & Research (n = 126)
E = Counseling & Human Devel. (n = 37)
F = History (n = 25)
G = Social Context (n = 86)
H = Schl Eval. & Program Devel (n = 63)
I = Education in the Professions (n = 30)
J = Postsecondary Education (n = 53)
K = Teacher Education (n = 142)

Division J members. As just one more example, the highly respected but more specialized journal *Child Development* appealed to a smaller subset of AERA members. Although it did not "make" the top 10 overall list, it was ranked first in Division E (along with AERJ). This illustrates the limitation of the "top 10" approach, and the need for the division by division analysis. Indeed, one may argue that even at the divisional level, scholarly interests are too diverse for ratings of this nature to be valid assessments of journal quality.

While of limited construct validity, our survey provides an interesting glimpse of academics' perceptions of the importance and relative contributions of journals in their respective disciplines. However, given the very real limitations of this survey, caution is urged in interpreting these findings. Indeed, as one of the reviewers of this manuscript noted, the "information has a great potential to be more powerful than the data." For instance, it would be unfortunate if promotion and tenure committees were to rely upon survey findings to evaluate faculty members' publication records. Any resulting expectation that scholars publish their work in the top five or ten journals listed in our survey would be misguided. Many excellent, but narrowly focused journals, have limited appeal to the general AERA population, but are the bread and butter of many scholars. The relative importance of a professional publication—its quality, prestige, utility, and appeal—is difficult to quantify. Nevertheless, our survey provides a snapshot of how the respondents value the journals in their discipline(s).

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Author's Notes

An earlier version of this paper was presented at the annual meeting of the American Educational Research Association, Chicago, 1991. We wish to thank the reviewers for *Mid-Western Educational Researcher* who provided comments on an earlier draft of this manuscript.

MWERA Communication & Update

Election Results

The results from the spring MWERA election are as follows:

By-Law Approval
Yes

Vice President
Greg Marchant, Ball State University

Member-At-Large
Jack Snowman, Southern Illinois University

Association Council

Kim Metcalf, Indiana University
Marlene Schommer, Wichita State University
Jennifer Fager, South Dakota State University
Stephen Jurs, University of Toledo
Leslie Lukin, University of Missouri
Isadore Newman, The University of Akron
Mary Sudzina, University of Dayton

MWERA in Atlanta

As has become a tradition, the members of the Mid-Western Educational Research Association found time between papers and symposia to gather and socialize during the annual meeting of the American Educational Research Association. Member-at-Large Sharon McNeely arranged for a room at the Atlanta Hyatt and the membership practiced a little southern hospitality. The event was well attended and a pleasant time was had by all.

Member-At-Large Sharon McNeely and President-Elect, Rick Pugh

Southern Illinois in Atlanta

Mary Ann Flowers, Malu Gonzalez, Adria Karle Weiss, Sue Tracz, and Carolyn Benz plan research for next year's AREA

MWERA President Ken Kiewra

New Editors Appointed

The editors of the official MWERA publication are appointed every three years by the current President of the Association. After serving a three-year term as co-editors, Greg Marchant and Isadore Newman will be replaced by the former president of the Association who appointed them. Ken Kiewra appointed Ayres D'Costa, Ohio State University, to serve as the editor with Susan Brookhart, Duquesne University, and John Surber, University of Wisconsin-Milwaukee, to serve as associate editors of the *Mid-Western Educational Researcher* beginning with the Winter 1994 issue. Greg Marchant was elected to the Executive Council as vice president and will be serving as next year's program chair. Isadore Newman was elected to the Association Council.

"Mid-Western Educational Researcher" Editors, Greg Marchant and Isadore Newman

Incoming editors, Ayres D'Costa and Susan Brookhart

Incoming editor, John Surber

Reviewers Thanked

As the *Mid-Western Educational Researcher* has become established as a peer reviewed journal, the number of manuscripts submitted has increased. The journal is indebted to the editorial board and the following reviewers who helped shape the quality content of the *Mid-Western Educational Researcher.*

M. Kay Alderman, The University of Akron
A. AlRubaiy, The University of Akron
Thomas Andre, Iowa State University
Linda Annis, Ball State University
Carolyn Benz, University of Dayton
Richard Brosio, Ball State University
Ayres D'Costa, The Ohio State University
Margaret Dietzer, Ball State University
Anthony Edmonds, Ball State University
Frank Farley, University of Wisconsin-Madison
Naim Gupta, Ball State University
Judson Harmon, Wisconsin Department of Public Instruction
William Hazard, Northwestern University
Tonya Huber, Wichita State University
Adria Karle-Weiss, University of South Florida
Gary Knowles, University of Michigan
Dennis Leitner, Southern Illinois University
Suzanne MacDonald, The University of Akron
Keith McNeil, New Mexico State University
Teresa Miller, Ball State University
Carole Newman, The University of Akron
Sharon Paulson, Ball State University
Francine Peterman, Ball State University
John Pohlmann, Southern Illinois University
Jay Price, University of Wisconsin-Stevens Point
Richard Pugh, Indiana University
Ulrich Reitzug, University of Wisconsin-Milwaukee
James Schuerger, Cleveland State University
Lawrence Sherman, Miami University
Jack Snowman, Southern Illinois University
Mary Sudzina, University of Dayton
Marcia Summers, Ball State University
Roy Weaver, Ball State University
Terry Weidmer, Ball State University
Doug Wilkin, DW Enterprises

Woolfolk to Speak at MATEP

Anita Woolfolk, researcher and author of the best-selling introductory educational psychology textbook, will open and close the annual meeting of the Midwest Association of Teachers of Educational Psychology. The conference will feature paper sessions, workshops, and discussion groups. A dinner speech by Isadore Newman will focus on the application of Deming's principles and statistical quality control in education. The conference will be held October 1-2 at Anderson University in Anderson, Indiana (30 miles northeast of Indianapolis). For more information contact: Greg Marchant, MATEP, EDPSY-BSU, Muncie, IN 47306.

Research Alive: How Accurate is the Conventional Wisdom About Classroom Testing Practices?

By Jack Snowman, Southern Illinois University at Carbondale

Surveys of classroom life indicate that a fair amount of time is devoted to measuring how much knowledge and skill students have learned. Depending on how broadly the nature of measurement is defined, this process may consume as much as 20 percent of a student's typical day. The single most influential measurement activity is the written test, accounting for about 45 percent of a typical student's course grade. The overall importance of classroom measurement activities was pointed out by Terrence J. Crooks (1988). In a broad review of the classroom measurement literature that appeared in volume 58 of the *Review of Educational Research*, Crooks noted that classroom evaluation guides students' "judgments of what is important to learn, affects their motivation and self-perceptions of confidence, structures their approaches to and timing of personal study (e.g., spaced practice), consolidates learning, and affects the development of enduring learning strategies and skills." The implication that falls out of these findings is clear: teachers and students should be as accurately informed as possible about the nature of measurement in general and about written tests in particular. But, as the studies summarized below point out, teachers and students often have distorted ideas about certain aspects of classroom testing.

In this column I will look at five recent studies that address various classroom testing practices and I will compare the results of each study with what teachers, students, and measurement experts generally believe to be true (the so-called "conventional wisdom"). The specific issues that these studies address are:

1. Should students change their answers to multiple-choice questions?
2. Do students learn more when they are tested and receive feedback as compared to being given the same amount of time for additional study?
3. Do students learn more when they are given more tests?
4. How valid are two multiple-choice item-writing rules ("Avoid 'none of the above' as an option." "Use either the question format or the completion format when phrasing the stem.")?

If you have ever changed your answer to one or more multiple-choice questions because you weren't sure about the accuracy of your first choice, but nevertheless felt that such answer-switching wouldn't improve your score anyway, your behavior and attitude was both typical and misinformed. In volume 59, number 3, of the *Journal of Experimental Education*, Marshall A. Geiger (1991) notes that the conventional wisdom among students is that the first answer selected on a multiple-choice test is likely to be the correct one. But the handful of studies carried out over the past 60 years indicate that for every point lost because of answer-switching, about 2 to 3 points are gained. Geiger's goals were to replicate this basic finding and to see if students could accurately predict the consequences of their answer-switching.

For each of four one-hour exams in accounting that 124 undergraduates took over the course of a semester, Geiger noted the number of answers that were changed and asked students to indicate whether they thought their changes produced higher scores, lower scores, or the same score. Consistent with the historical pattern, students gained an average of 2.6 points for every point they lost. Futhermore, 70 percent of the group increased their scores. But at the same time, most thought they did themselves a disservice by changing answers. (Perhaps this is the source of the conventional wisdom.) Twenty-three of the students (18 percent) believed that they improved their scores by changing initial responses, whereas 65 students (52 percent) believed that they lost points, and 36 students (29 percent) believed that it made no difference in their overall score.

In volume 59, number 4, of the *Journal of Experimental Education*, Clifton A. Casteel (1991) reports on an investigation of the role of reading ability on the efficacy of answer-switching among eighth-grade students. The test that these students took was the Cornell Critical Thinking Test. Because this test contains items that measure inference, induction, deduction, and evaluation, Casteel assumed it would induce students to spend more time thinking about the accuracy of their answers, thereby producing a high level of answer-switching.

Although level of reading ability did not influence the number of answers changed, poor readers were more likely than good readers to change an incorrect response to a correct response. Consistent with previous research, students changed about twice as many wrong answers to right answers as right answers to wrong ones. Clearly, teachers need to get the word out to students that they should not be hesitant to change answers they have doubts about, particularly if they can narrow their choice to two options.

A second piece of conventional knowledge among students at all levels of education is that additional study time in lieu of a test produces at least as much, if not more, learning of the target information. (And how many of us haven't made a similar appeal to a teacher at one time or another?) This notion was put to the test by Mark A. McDaniel and Ronald P. Fisher (1991). In volume 16, number 2, of *Contemporary Educational Psychology*, they report on how well four groups of undergraduates fared when assigned to different types of testing or additional study conditions.

To control for prior knowledge, the students were asked to learn a set of 54 little-known facts (e.g., Pocahontas is buried

(continued on page 20)

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along the Thames River," "A row of crows is called a murder"). An initial level of learning was produced by asking the students to rate each item for comprehensibility on a five-point scale. Following the initial learning task, about one-fourth of the subjects saw 36 of the original 54 facts for 5 seconds apiece and repeated that fact aloud for another 10 seconds. A second group saw the same facts for five seconds apiece and then gave a plausible reason why the sentence is true. Students in the third group received a question about each of the 36 facts (e.g., "Why is Pocahontas buried along the Thames River?"), were given the answer after five seconds, and then repeated the answer aloud for another 10 seconds. Students in the fourth group also received a question about each of the 36 facts, also saw the answer five seconds later, and then gave a plausible reason why the answer is true. Twenty-four hours later, all students responded to 54 questions about the original 54 target facts.

There were two noteworthy findings. First, students in the testing and feedback conditions (groups three and four) significantly outscored students in the additional study conditions (groups one and two). Second, type of processing—rote rehearsal or elaboration—did not significantly affect performance.

Now that we know that testing leads to more learning than additional study time, the question that logically follows is, Do students who take more tests learn more than students who take fewer tests? Although most students would disagree, many teachers have long believed that students learn and retain more information when they are tested relatively more often. The existing literature tends to support the teachers' conventional wisdom, although the effect is usually a small one. The more frequently tested group scores about one-fifth of a standard deviation higher on a final achievement test than the less frequently tested group (as effect size of .20 for those of you who think in meta-analysis terms). Whether this finding can be generalized to high school students is uncertain because only four studies have focused on the performance of this age group, and they all contained serious methodological flaws. For example, in some studies items from each of several quizzes were repeated verbatim on the final achievement test. This gave an advantage to the more frequently tested students because they took more quizzes. Another flaw in some studies is that the less frequently tested students took but one test—the final achievement test.

An examination of the role of frequency of testing among high school students that avoided methodological flaws like the two just mentioned was conducted by Abdulkalig Khalaf and Gerald S. Hanna (1992). Writing in volume 17, number 1, of *Contemporary Educational Psychology*, Khalaf and Hanna report on a study conducted in Saudi Arabia on over 200 tenth-grade male students. As part of their normal classroom routine, the less frequently tested students were given one short quiz a month. The more frequently tested students were given two quizzes each month. All students took an end-of-semester exam and a delayed exam three months later. For each of the two criterion measures, the more frequently tested students scored about one-third of a standard deviation higher than the less frequently tested students.

Summarizing across the McDaniel/Fisher and Khalaf/Hanna studies (and bearing in mind the danger of straightforwardly generalizing from one culture to another, and from one gender to another), it appears that current findings about whether to test and relatively how often favor the teachers' conventional wisdom over that of the students. So, the next time your students groan at the prospect of having to prepare for and take a test, tell them that you're doing it for their benefit and that they'll thank you for it one day. While they may not like it or believe it, and they probably will not thank you one day, they do seem to learn more.

The last testing issue I will take up concerns the rules and guidelines for writing multiple-choice items that are typically found in classroom measurement textbooks. In an article that appeared in volume 59, number 2, of the *Journal of Experimental Education*, Kevin Crehan and Thomas Haladyna (1991) point out that this large body of conventional wisdom is based on a relatively small empirical base (about 100 studies), and that most of the studies deal with a small subset of the entire set of rules. For example, slightly more than half of the studies deal with the issues of whether three, four, or five options are best, and the desirability of having each option keyed correct about equally often. Crehan and Haladyna examined the validity of two commonly mentioned but lightly researched rules for writing multiple-choice items: "Avoid 'none of the above' as an option" and "Use either the question format or the completion format when phrasing the stem.

In a review that appeared in volume 2, number 1, of *Applied Measurement in Education*, Thomas Haladyna and Steven Dowing (1989) found strong disagreement among 34 authors on whether to include "none of the above" as an option in a multiple-choice item. Nineteen authors felt it should be avoided, while fifteen felt its use was acceptable. The empirical literature seems to favor the majority opinion in this case. As was the case in 10 earlier studies conducted by other researchers, Crehan and Haladyna found the while "none of the above" makes items slightly more difficult, it does not improve a teacher's ability to discriminate between levels of student mastery. They recommend spending more time trying to write better distractors than relying on "none of the above."

The conventional wisdom about the relative merits of a question format for the stem versus a completion format is more unified. Of 41 references that addressed this issue, all agreed that both formats were equally acceptable. But the six studies that make up the empirical base for this rule indicate that the question format makes items slightly easier and test scores more reliable and valid. Crehan and Haladyna, however, found no significant differences in difficulty or discriminability as a function of format.

One moral that can be drawn from this brief review is the same one that has been drawn in many other fields: know the facts of the phenomenon you're dealing with because the majority view, while right on some occasions, is wrong on many others.

Assessment, Instruction, Advice
An Interview with W. James Popham

By Barbara S. Plake,
Buros Institute of Mental Measurements,
University of Nebraska-Lincoln

W. James Popham is the Director of IOX Assessment Associates in Los Angeles, California. He received his bachelor's and master's degrees from the University of Portland and his doctorate in education from Indiana University. He has numerous papers, articles, chapters, and books to his credit. He served as the president of AERA and is the founding editor of Educational Evaluation and Policy Analysis.

BP **First, I'd like you to tell us a little bit about your background and how your career developed.**

JP Originally, I wasn't interested in measurement or evaluation or anything mildly quantitative. I had been a high school teacher and decided that teacher education was such a travesty I should move into it at the college level; it was a field in which competence did not prevail.

BP **What subject did you teach in high school?**

JP In high school I taught in a small eastern Oregon HS; I taught everything. I taught geography, English, speech, social studies, tennis coach. I decided I wanted to go into teacher education as a professor. Therefore, when I went to graduate school I focused on instruction, not on measurement. In fact, I took only one course in measurement. So instruction was where I started my interest and then I discovered that the really controlling feature of instruction was the goals to which the teacher aimed the instruction. Therefore, I found myself dealing with objectives and I realized that objectives without measurement are just so much rhetoric. I found myself gravitating toward measurement; in the last 20 years, that's where my head has been.

BP **You've been at UCLA for about 30 years. After you finished your graduate work did you go straight to UCLA?**

JP Well, I went to graduate school at Indiana University. I enjoyed the time there. I taught at a couple of colleges, San Francisco State College for two years. Kansas State College of Pittsburg was the first place I could get a job, so I taught there for two years. When I went to UCLA, my focus was instruction exclusively. I taught courses in how to prepare teachers, which is what I wanted to do. But in the process of really thinking hard about instruction, it became apparent that measurement was a powerful tool to influence instruction. When the accountability movement took over and people really had to deal with high stakes tests and the enormous impact of those tests, it just happened that I was in that area.

BP **Tell me a little bit about the evolution of IOX (Instructional Objectives Exchange).**

JP It happened on a trip to Fresno. I was giving a presentation in Fresno describing the raptures of behavioral objectives and, at the conclusion of the day, the superintendent and his colleagues took me to the airport and told me that they were going to engage in the creation of behavioral objectives for mathematics grades K through 6. Two days earlier I'd been at Las Vegas in the Clark County Schools and had been informed that they too were going to create mathematics behavioral objectives K through 6. It struck me that there would be enormous repetition, so on the plane back from Fresno I thought I should figure out some way to have an exchange of objectives so people wouldn't have to do other people's work. I went to the UCLA Center for the Study of Evaluation; they thought it was a great idea and the project got started in 1968. After two years, we were told by the Federal Government to break off from UCLA because it was a service, not research and development, so we did. We moved off campus and have been operating independently ever since.

BP **That service now provides items as well as objectives.**

JP Right. The original thought just to prepare objectives was not well conceived; that's one of the mistakes I made. I found that although the objectives were being bought pretty widely across the country, they weren't influencing instruction at all. I decided, maybe 15-20 years ago, to move IOX from an objectives-dispensing enterprise to an assessment-creating enterprise.

BP **I'm very interested in your perception of the national exam movement. In particular, what do you think of the major forces behind it, what do you think**

(continued on page 22)

are the positive consequences and what are the negative and unintended consequences of such a system?

JP First off, I confess that I read about the efforts of the proponents of national testing, but I'm not intimately familiar with the innards of the various projects. The basic premise of national testing is one that I find compelling. IOX has developed criterion-referenced high-stakes tests for more than a dozen states. The degree of overlap in certain main line curricular areas is enormous. There really aren't that many fundamental differences in mathematics instruction between California and Montana. However, having once recognized that national assessment is conceivable, it all depends on the way that national assessment and national goals in assessment are conceptionalized. If it turns out that the architects of those national assessment systems install instructionally insensitive tests, then substantial harm will have been done. It will have set up standards and expectations that educators will have a great deal of difficulty achieving because there are no instructional implications associated with the tests. If the tests are created exclusively by people who know measurement but not instruction, then I would predict they will have a very harmful effect on the quality of schools.

BP **Do you think it will become the focus of instruction?**

JP Let's think about a typical norm-referenced achievement test and the degree of instructional clarity it supplies for teachers. The answer is very little instructional clarity. In fact there is a great deal of generality and vagueness associated with the test. Let's assume for the moment that the architects of the new national test carry with them the norm-referenced conception and they want to sample broadly from large domains of interest. The only way a teacher can really teach effectively toward a norm-referenced test, because forms change, is to teach to particular items: item-specific instruction, in other words. That's pretty reprehensible. If you don't conceptualize the test in such a way that people can actually teach kids to do those things, then you created a force for educational penalties, not progress.

BP **I see two directions to resolve that. One is to go to criterion-referenced items rather than norm-referenced items. I'd like you to talk about the implications of that. The other would be to do more instructionally sensitive tasks, like performance assessment alternative assessment tasks.**

JP I think both of those approaches have virtue. In the first place, if these national tests are norm-referenced in their conceptionalization, they're simply going to be repugnant assessment instruments. I would certainly like to endorse a criterion-referenced orientation. The nature of the criterion-referenced test is quite a different matter. If these tests measure students' knowledge domains or skills that are impervious to instruction or relatively difficult to instruct toward, the tests probably won't accomplish much good. I think it's possible to engage in simultaneous cake-having and cake-eating where you can create a legitimate assessment instrument, but create it in such a way that teachers will be benefited by knowing what is sought. High stakes tests influence instruction; such tests simply have to have the right kind of conceptualization.

BP **In order for the criterion-referenced approach to be instructionally valid and meaningful, both the tasks have to be sensitive to instruction (as you say, not impervious to instruction) but also need to provide more information about domain specificity. Then I can actually say Johnny can or can't do addition with decimals; my instructional decisions are more specific. If that's the case you would end up with more items to administer which means more time and testing. What are the implications of that?**

JP The problem is an important one. I don't think it's possible for a test to assess all that many outcomes. I think the tests must measure only an intellectually manageable number of outcomes. That means the teacher will pay attention to a half dozen or so outcomes, but the teacher will not pay attention to 25 or 30 or 500. Once you've conceived the possibility that you have several important outcomes as opposed to a plethora of them, then you have to recognize that you can assess that terminal competency with a fair number of items, yet not so many that you yield a diagnostic picture of the student's progress on "en route" tasks. To get the latter, you have to do other kinds of testing. First, you find out that the kid hasn't mastered that particular outcome. Then, in order to find out where the deficits are within it, we have more informal, shorter tests.

BP **The items we've been talking about so far have been paper and pencil. What is your thought about doing performance assessment at the national level in this kind of a system?**

JP Performance assessments have a great deal of potential and promise. One of the real virtues of measurement in this country today, from a criterion-referenced perspective, is authentic assessment. One of the real vices of educational measurement today is also authentic assessment. There are too many devotees of performance testing who are not really thinking carefully about the practicality, the cost implications, and some of the psychometric issues. I think the general push toward more defensible kinds of student competencies, performance-assessed competencies, is a very laudable activity and I really think that the movement is great. The problem is that the people who are trying to implement it seem oblivious of some of the practical obstacles.

BP **Do you think the movement is going to fail because of inappropriate or too early implementation? What's your vision of how this is going to play out?**

JP Well, my score on the prophecy scale has been zero of late, but I'll be glad to take a shot. I think that there is a real possibility that authentic assessment, because it will be assailed on legitimate psychometric grounds, may be seriously waylaid. I think that can be avoided if authentic assessment's proponents move more cautiously toward advocacy of their approaches. For a while, authentic assessment was being done in several states on an almost controlled-study basis. Now it's being advocated in all settings for all purposes. I think that's just ludicrous.

BP **What do you think are the major legal issues in educational measurement as you see them through your experience?**

JP I think that the violations of professionally sound procedures constitute a cause for tests' being overturned. And that does not mean you have to rely on the Civil Rights Act of '64 and the recent '91 Civil Rights Act. Rather, it means that the courts will be attentive to the plea of failed examinees. If it can be shown that a test was not properly developed and evaluated, and if the test has a disparate impact on minorities, women, or any protected group, the test can legitimately be attacked. I think that we are all learning much more about what it takes to make a test legally defensible. In that process, though, I think we see that many of our current tests are woefully inadequate.

BP **With regard to the teacher licensure, what are the major weaknesses that you see that are brought into debate about the test?**

JP One is the inadequacy of the evidence regarding validity; that is, the evidence that can be used to bolster the notion that the inferences based on the tests would be valid. This is an attack on several grounds, but frequently on the grounds that either criterion-related evidence of validity was not present at all or that the content-related evidence of validity was not well gathered. Often that is the case! Frequently we do not do criterion-related studies of validity because there is no legitimate external criterion. In situations where we gather evidence regarding content validity, I find a good deal of it to be quite soft. I think there are procedures people have been using for quite some time that would allow us to really judge whether the content of a test is bona fide, and those have to be employed. The second area is setting of the cut-score. One finds this is done very frequently in a manner that is not equitable for all examinees. Those are the two areas where I think the tests are most vulnerable.

BP **One of the things you were commenting about was lack of content validation steps. It occurred to me that part of the problem is often too little time, too little resources to accomplish the task. There are probably compromises that can be made that will still address issues of content validity, not in the perfect content validity study.**

JP That's exactly right. There's an expression in bridge—if you're forced to sit down with a loser for a partner, you don't play for the best possible result. Rather, you play for the best result possible. Under the circumstances of having a weak bridge partner or an RFP (Request for Proposal) that makes you race instead of think carefully, you do the best job you can under those circumstances and it's often acceptable. The difficulty is sometimes that RFPs are led by state officials who have very high aspirations but don't realize the cost implications of those aspirations.

BP **How do we solve the problem where the legislators will legislate that there will be a test, and it'll be able to be used in ways that are probably not feasible. How do we educate them to let them know they are asking for the impossible?**

JP You put your finger on it. We need to be more proactive with respect to educational legislation. The idea of sitting back and allowing state legislators to create assessment programs without our at least giving a solid effort to modify their thinking strikes me as irresponsible. Yet I find many state departments of education where the only contact is initiated by the legislature, never by the state department. I think if I were head of an assessment program in a state, I would spend a fair amount of my time trying to educate legislators. In general I've found these people to be relatively able and well intentioned but, unfortunately, ignorant regarding what can and cannot be done with testing. So I think the way to address that is to get cracking with respect to informing those folks.

BP **One of the important questions that I want to spend time on involves giving advice to graduate students. One of the major goals of MWERA is working with graduate students in their professional development, in particular in the area of educational research and in publishing. What kind of advice would you give to the aspiring little Jimmy Popham who is now in graduate school and in general education research?**

JP I suppose I'd start by encouraging them to read a little column that I recently wrote for the *Educational Researcher* called A Slice of Advice. Essentially it says, "do these things and don't do those things." That probably represents my best bit of advice to educational professionals. With respect to research-focused graduate students, one thing I'd recommend for sure is to acquire a meaningful conversance with the principles of educational

(continued on page 24)

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measurement. I find that deficit, that shortcoming, so pervasive on the part of people who are getting out of graduate schools. If students only had some competence in educational measurement, they will be markedly more employable and potentially able to influence education in a more effective fashion. I would certainly stress measurement even more than statistics or research design. Testing will happen in this country, and it's not going to go away. Therefore, we need some more competent people who know how to play the measurement game.

BP **Students often ask me what kind of professional activities they should get involved with. Should students get involved with that? Is that good? Should they seek internships or should they just concentrate on their studies and get done? What do you think about diversity of professional development?**

JP I think it depends a lot on the student. I've certainly encountered many students at UCLA through the years who profited enormously from working as interns at IOX or as interns at ETS or endeavors of that sort. I think that the practicum kind of experience is invaluable for most students. On the other hand, for some students I think that the best thing they can possibly do is race through the graduate program and get out. I think it's almost an individual call. My leaning would be toward more real-world experience. I think there is something very unfortunate about an academic community where the professorial flock has not faced real world problems for several decades.

BP **What about going to national meetings? Do you think it's advantageous for students to go to national meetings?**

JP The question of whether it's good is answered only one way; it is good. The question of whether it's good enough to warrant the cost depends how far the national meeting is. I find that I would frequently encourage my students to go to AERA when it was in San Francisco because the cost of getting from Los Angeles to San Francisco is fairly modest. When the meeting was in Boston or Washington, DC. I would think a lot harder about recommending it. I think the state or regional educational research associations, such as the one you're representing or the California Educational Research Association, are every good locales for beginners to try their own wings and to listen to others.

BP **Students sometimes are interested in working on research projects or working on service projects, but often they also want to have financial support in order to make time in their prioritization. Some of them are concerned about being exploited. What do you think of the problem of potential exploitation?**

JP Exploitation takes place in universities of graduate students and it's unfortunate. It's sufficiently particularistic; we have to really deal with a given situation. I think in general there is less exploitation and more real effort to get students involved in practical work than we might think. However, you have to be constantly on guard. If you are a graduate student, you have to make up your own mind as to whether or not this professor is really trying to give you a meaningful educational activity.

BP **Do you have other advice for graduate students in the program beyond what I've brought out?**

JP I think the advice that I have for graduate students is to really go out of your way to spend some time with respected professors and pose practical real career problems to them. I think graduate students are too reluctant to ask for this kind of practical advice. The more they ask, the more insights they get. If, for example, a graduate student asked me the kinds of questions that you just have, that graduate student might get some important insights out of the answers. Granted that a graduate student doesn't know as much as you do about asking questions on the content, but still I think there are good professors whose insights should be sought.

Developing Structural Equation Models

By Randall E. Schumacker, University of North Texas

Abstract

Structural equation models have been developed in a number of academic disciplines to substantiate theory. The structural equation modeling approach involves developing measurement models to define latent variables and then establishing structural equations among the latent variables. This article was written to provide educational researchers with a better understanding of how to develop structural equation models. A deliberate attempt was made to minimize matrix and statistical notation so the reader could better understand the structural equation modeling approach.

Structural equation models establish the relationship between latent variables or constructs given a theoretical perspective. The basis for structural equation models is found in multiple regression, path analyis, and factor analysis techniques. A brief review of these statistical approaches will be presented to provide a better understanding and background for the development of structural equation models.

Overview

Multiple regression is a widely accepted analysis technique and used by educational researchers. Multiple regression methods basically determine the overall contribution of a set of observed variables to the prediction, of another variable in a model, or delineate the best subset of multiple independent predictors. A multiple regression model is generally depicted as:

$$Y' = \beta_1 X_1 + \beta_2 X_2 \ldots\ldots \beta_n X_n ,$$

where Y is the criterion variable or the variable to be predicted and X are the predictors. R^2, adjusted R^2, C_p, or PRESS statistics are used to determine the ability of a set of variables to predict (Younger, 1979). Multiple regression equations also permit the use of nominal, ordinal, effect, contrast, or polynomial coded variables (Pedhazur, 1982). The multiple regression approach however is not robust to measurement error and model mispecification (Bohrnstedt & Carter, 1971) and forms an additive model rather than a relational model, hence the emergence of path analysis.

Wright (1921), a biologist, developed path analysis to gain a better understanding of genetic theory. In the early 1960s, the technique became popular in the behavioral and social sciences (Asher, 1976). Path analysis provides the methodology for examining theoretical models. It essentially permits the determination of data fit to a theoretical model, the specifying of a causal relationship from correlated data, and the testing of alternative theoretical models (James, Muliak, & Brett, 1982). Path models are analyzed by simply conducting several multiple regression analyses (Williams & Klimpel, 1974).

Path analysis equips the educational researcher with a method to specifically relate observed variables based upon theory in a manner that is relational (causal), not additive as in multiple regression. For example, Figures 1a, 1b, and 1c indicate three different ways a path model can be depicted depending upon whether a correlated causal effect, mediated causal effect, or independent causal effect respectively is present (Pedhazur, 1982). The advantage of path analysis over multiple regression analysis is this ability to specify the type of relationship among the independent variables when predicting the dependent variable. The determination of which model is best or correct however requires a theoretical perspective and model fit statistics to compare competing theoretical models.

Figure 1a
Correlated Causes

Figure 1b
Mediated Causes

Figure 1c
Independent Causes

Pedhazur (1982) cited certain assumptions which must be met in performing path analysis: (1) the relationship among the variables in the model should be linear, additive, and causal; (2) each residual should not be correlated with variable error that precedes it in the model; (3) there is a one-way causal flow in the model; (4) the variables are measured on an interval scale; and, (5) the variables

(continued on page 26)

are measured without error. These assumptions continue to be cited as necessary for path analysis (Baldwin, 1989; Loehlin, 1992; Tracz, 1992). However, Boyle (1970) and Lyons (1971) previously indicated that nominal or ordinal variables are permissable and that path coefficients can be corrected for measurement error. In addition to these assumptions, certain conditions remain for the appropriate use of path analysis: (1) temporal ordering of the variables in the model; (2) covariation among the variables; and, (3) controlling for other causes (Pedhazur, 1982). Tracz (1992) has recommended that path analysis be based upon sound theory, utilize large samples, meet assumptions, present both standardized and unstandardized path coefficients, and be replicated and/or cross-validated to confirm conclusions.

Path analysis has distinct advantages over multiple regression. It affords the ability to establish a causal relationship among independent variables, specify the relationship among the independent variables, and model the complex nature of variable relationships posited by theory. Path analysis also has certain limitations. For example, many path models do not include interaction effects (Newman, Marchant, & Ridenour, 1993) and the observed variables are assumed to be perfectly measured (Bohrnstedt & Carterr, 1971). Moreover, the path coefficients are prone to misinterpretation (Tracz, 1992) and the assumption of linear causal relationships precludes testing for apparent nonlinear effects in theoretical models (Pohlmann, 1991).

Structural equation models were developed to resolve the problem of single observed variables and their related measurement error in path analysis. The measurement error of a single variable tends to overstate or understate the causal impact on the disturbance term of a dependent variable (Frerichs, 1990a; 1990b). Today, it is commonly accepted that multiple observed variables are preferred over a single variable in defining a latent variable (Pedhazur & Schmelkin, 1992). Structural equation models differ from path analysis models in that they use latent variables rather than observed variables and combine a measurement model with a structural model to substantiate theory.

Measurement Models

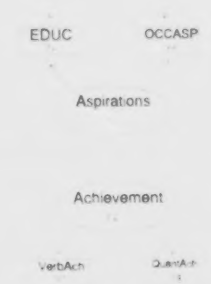
Confirmatory factor analysis methods reflect measurement models where observed variables define constructs or latent variables. Latent variables are considered to not be directly measurable (factors or constructs, e.g. spatial ability). Instead, the factor leading of each observed variable indicates the correlation with the construct of interest and in sharing communality (common variance) with other variables identifies the latent variable (Kim & Mueller, 1978a; 1978b). Figure 2a presents a measurement model which defines two independent (exogeneous) latent variables, home background and ability, based upon their respective observed variables. Figure 2b presents a measurement model which defines two dependent (endogeneous) latent variables, occupational aspirations and achievement, based upon their respective observed variables. In the structural equation model example presented later, aspirations, will also serve as an independent (exogeneous) variable when predicting achievement.

Figure 2a

Measurement Model: exogeneous (independent) latent variables

Figure 2b

Measurement Model: endogeneous (dependent) latent variables



The ability of the observed variables to measure each latent variable is assessed by h^2 or the sum of the factor loadings squared divided by the number of variables. The expression $1 - h^2$ indicates the amount of variance not explained or the degree to which the latent variable is not defined by the observed variables. The measurement model (confirmatory factor analysis) reflects how reliable the observed variables are in defining the latent variables.

Structural Equation Models

Structural equation models establish the relationship between the latent variables (factors). Structural equation modeling is also referred to as covariance structure analysis, latent variable analysis, or linear structural relationships (Duncan, 1975; Loehlin, 1992). Structural equation models, in establishing latent variable relationships, differ from either path analysis or factor analysis which use observed variables (Lomax, 1982; Long, 1983). Structural equation models have become widely used in the social and behavioral sciences to combine the confirmatory factorial measurement model with the structural relationship among the latent variables (Saris & Stronkhorst, 1984; Anderson, 1987; Fassinger, 1987; Bollen & Ting, 1991).

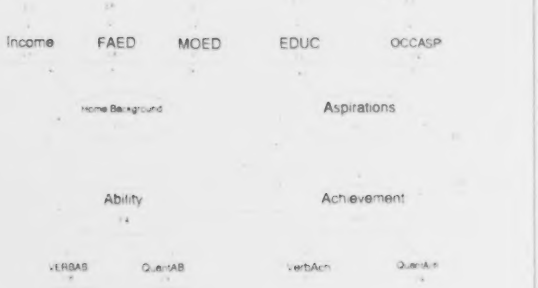
Structural equation modeling has been shown to be related to multiple regression, path analysis, and factor analysis techniques (Schumacker, 1989). Factor analysis establishes the measurement models whereby several observed variables serve to define the latent variables of interest. In structural equation models, these measurement models are determined for both independent latent variables and dependent latent variables. Multiple regression techniques permit the formulation of a structural equation

Structural Equation Modeling *(continued)*

which specifies the prediction of the dependent latent variable(s) by the independent latent variables(s). Path analysis provides the framework in which to diagram the specific relationships between the independent and dependent latent variables of interest given a theoretical perspective. A structural equation model example that combines the latent variables previously mentioned and which has been used elsewhere for illustrative purposes is in Figure 3 (Joreskog, 1973).

Figure 3

Structural Equation Model



The observed variables income (V5), father's education (V6), and mother's education (V7) with their respective error terms define the latent variable *home background* (F3); the observed variables verbal ability (V8) and quantitative ability (V9) with their respective error terms define the latent variable *ability* (F4); the observed variables education aspirations (V1) and aspirations (V2) with their respective error terms define the latent variable *aspirations* (F1); and finally the observed variables verbal achievement (V3) and quantitative achievement (V4) with their respective error terms define the latent variable *achievement* (F2). These comprise the measurement models. Home background (F3) and ability (F4) are exogeneous (independent) latent variables that covary in predicting aspirations (F1), an endogenous (dependent) latent variable with error (D1). Also, home background, ability, and occupational aspirations predict achievement (f2), an endogeneous latent variable with error (D2). These comprise the structural equation models.

EQS, a computer program which does not require matrix notation for expressing the measurement and structural equations, has been developed for analyzing structural equation models (Bentler, 1989). EQS programs use four basic prefixes to specify equations: observed variables (V), observed variable error (E), latent variables (F), and latent variable error (D). The /SPECIFICATIONS statement indicates the number of cases, number of variables, and the method of analysis, e.g. least squares, maximum likelihood. The /EQUATIONS statement identifies which observed variables define which latent variables and their corresponding residual error as well as the structural equations which relate the latent variables. The equations are taken directly from the observed and latent variable relationships diagrammed in the model. The /VARIANCES statement indicates which error term parameters are to be estimated. The /COVARIANCES statement indicates that the error terms for father's education and mother's education covary as does the latent variables home background and ability. The /DIAGRAM statement will draw the structural equation model. The measurement models (Figures 2a, 2b), in equation form, would be expressed as:

education aspirations = aspirations + error
occupational aspirations = aspirations + error
verbal achievement = achievement + error
quantitative achievement = achievement + error
income = home background + error
fathers education = home background + error
mothers education = home background + error
verbal ability = ability + error
quantitative ability = ability + error,

and the structural models (Figure 3), in equation form, expressed as:

aspirations = homebackground + ability + + error
achievement = homebackground + ability + aspirations + error.

The EQS program to conduct the structural equation model analysis is in the Appendix. As in path analysis, structural equation models should have an appropriate theoretical framework. Any proposed model has assumptions which involve specification, estimation, and the testing of alternative models. The theoretical proposed models are substantive in nature and as such the goodness-of-fit statistics guide the interpretation of results (Bentler, 1990, Bollen, 1989; Muliak, et al., 1989). The emphasis is on data fitting the theoretical model, not the model fitting the data.

Discussion

James, Mulaik, and Brett (1982) proposed a two-step model approach which emphasized the analysis of the two conceptually distinct latent variable models: measurement and structural. Anderson and Gerbing (1988) described their approach by stating that the measurement model provides an assessment of convergent and discriminant validity and the structural model provides an assessment of predictive validity. Muliak, et al. (1989) further expanded the idea of assessing the fit of the structural equation model among latent variables (structural model) independent of assessing the fit of the observed variables to the latent variables (measurement model). Their rationale was that with few latent variables, most parameter estimates define the relationships of the observed variables to the latent variables in the measurement model, rather than the structural equation relationships of the

(continued on page 28)

latent variables themselves. A discussion remains, but regardless of a one or two-step approach, care should be taken to define in a valid and reliable manner the latent variables prior to determining how well they predict in the structural equations.

Summary

Loehlin (1992) and Schumacker (1989) have previously indicated that structural equation models merge multiple regression, path analysis, and factor analysis techniques into a single data analytic framework. Baldwin (1989) provided additional information concerning assumptions and how structural equation modeling is used. This article focused on how to develop structural equation models using path diagrams and the concepts of measurement and structural equation models.

Basically, confirmatory factor analysis provides the measurement model for defining latent variables, multiple regression yields the structural equations between the independent (exogeneous) latent variables and the dependent (endogeneous) latent variables, while path analysis affords the rudiment for diagramming the model. Structural equation modeling involves the development of both measurement models and structural equations.

The use of structural equation models which establish the relationships among the latent variables are subject to substantive theory or model assumption validity as in path analysis. The use of this methodology is also impacted by the requirement of sufficient sample size, interpretation of model fit statistics which lack known distributional properties, missing data, outlier effects, model identification, multivariate normality, and research hypothesis testing concerns (Fornell, 1983). Bagozzi and Yi (1988) also cited problems with the evaluation of model fit and concerns related to validity, cross validation, power, and generalizations from structural models. Future research will further clarify these issues given the usefulness of structural equation models.

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(continued on page 32)

Insidious Structural Errors in Latent Variable Models

By John T. Pohlmann, Southern Illinois University, Carbondale

Abstract

This article illustrates a specification error problem in a simple structural model. A quadratic relationship, described by a linear structural model with a latent variable, is shown to have less predictive validity than a simple manifest variable regression model. The use of simpler analyses that require fewer structural assumptions is advocated as a preliminary analysis to latent variable structural modeling. A discussion of the role of statistical models in the detection of causal relationships is also provided.

John Stuart Mill advocated experimentation for the detection of causal mechanisms. Mill established empirical guidelines for researchers pursuing causal hypotheses with his Canons of Agreements, Differences and Residues (Harré, 1972, p. 38; Holland, 1988). Letting X and Y represent events which are respectively a cause and an effect, experimental methods provide convincing evidence for the proposition "X is a cause of Y" because a positive outcome from a well-designed experiment ensures three things: 1. X temporally precedes Y, 2. X and Y are related, and 3. all other influences on X and Y are controlled (Kenny, 1979, p. 3). In this scheme X is an independent variable and Y is a dependent variable. Temporal sequencing is established in an experiment by first manipulating X and then measuring Y. Point 2 is established if a nonrandom association is observed between X and Y. Finally, point 3 is assured if the experiment is properly designed. Nonexperimental causal investigators look for these three sources of evidence in natural systems of variables.

Temporal sequences of variables can be detected using longitudinal observation designs. Relationships between variables are easy to detect with modern computers. If X and Y are variables measured on a random sample, we can examine hypotheses of the form:

$$H_0: E(Y|X = c) = E(Y|X = d)$$

where E is the expectation operator and c and d are any two distinct values in the sample space of X. Rejection of such hypotheses leads to the conclusion that X is related to Y.

On the other hand, control of extraneous variables is a problematic issue in nonexperimental designs. The experimental techniques of randomization and holding variables constant are usually replaced with statistical controls or targeted sampling in nonexperimental studies. One can only control for variables that have been measured. And we only measure those variables which are thought, a priori, to be important. There always exists the possibility that some antecedent unmeasured variable might produce a spurious relationship between X and Y which would, in turn, give only the illusion of a causal relationship to the naive observer.

The analysis of linear structural relations is the statistical method of choice for modern causal analysis in nonexperimental settings. These analyses estimate linear model structures which are presumed to describe the causal mechanisms governing variables. The underlying models for these analyses are guided by Mill's criteria listed above. Additionally, linear measurement models may be imposed on the observations, in which measured or manifest variables are assumed to be caused by unmeasured latent variables. The structural assumptions linking the manifest and latent variables are linear in form and the latent variables are estimated from linear combinations of the manifest variables.

This critique will address two insidious specification errors associated with the common use of these models: 1. nonlinear causal patterns and 2. prediction with latent variables instead of manifest variables. These errors can result in serious misinterpretations which will be illustrated here.

Linear relationships between variables are usually assumed because of the simplicity of the models which result. The relationship between two variables can be conveniently described by one structural parameter-a slope. Latent variables are also used in structural models in order to simplify an analysis. Simpler models result if many manifest variables can be subsumed under a fewer number of latent variables. While simplicity and parsimony are desirable attributes of models, there is a much more fundamental attribute which should guide us-accuracy.

The matrix expression for the most general linear structural model is given by

$$\beta\eta = \Gamma\xi + \zeta \qquad (1)$$

where B is a matrix of the coefficients of the effects of the endogenous variables on endogenous variables, η is a vector of latent endogenous variable, Γ is a matrix of coefficients measuring the effects of the exogenous latent variables (ξ) on the endogenous latent variables and ζ is a vector of errors.

The manifest endogenous and exogenous variables are assumed to be determined by latent variables in two measurement models

$$y = \wedge_y\eta + \varepsilon \qquad (2)$$

and

$$x = \wedge_x\xi + \delta \qquad (3)$$

where y and x are manifest endogenous and exogenous variables

(continued on page 30)

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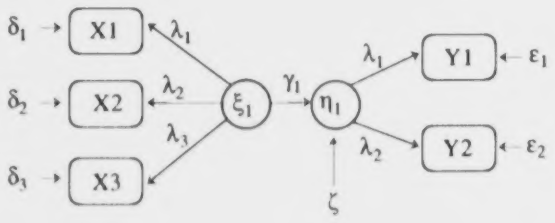
respectively, η and ξ are the corresponding latent variables, $\wedge_y$ and $\wedge_x$ are the structure coefficients and ε and δ are the respective errors of measurement. In the above expressions all manifest and latent variables are assumed to be standardized.

Figure 1 below presents a path diagram for a simple structural model with two latent variables. Three exogenous and two endogenous variables are expressed in the model as working through latent variables ξ_1 and η_1 respectively.

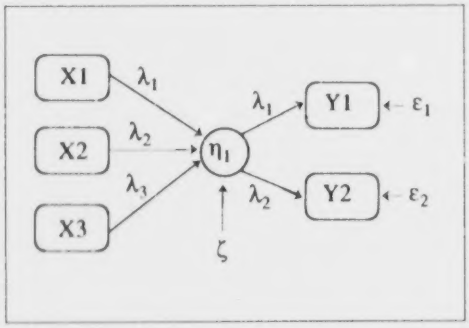
Figure 1
A Latent Variable Path Diagram



The structural parameters denoted in Figure 1 (λ_i and γ_1) describe linear relationships. λ_1 is a factor loading or the slope of the standardized regression of X1 on ξ_1, and γ_1, is the slope of the standardized regression of η_1 on ξ_1. Clearly, if the latent and causal structures are not linear then the model represented in Figure 1 would not accurately describe the relationships among the variables.

Also the model of Figure 1 transmits the causal influence of X_1, X_2 and X_3 through ξ_1, a latent variable. If this model is correct, then the use of ξ_1 is justified over the use of the separate predictors, X_1, X_2 and X_3, because ξ_1 will be measured more reliably than the individual Xs. An implicit assumption is made here—X_1, X_2 and X_3 have no specific or direct influence on

Figure 2
Model 2 for η_1 with no Latent Variable for the Xs



Y_1 and Y_2. If a researcher suspected direct and specific linkages between the Xs and Ys, an alternative to the model in Figure 1 might be explored.

The model described in Figure 2 frees X_1, X_2, and X_3 from a common latent variable and allows them the have separate structural parameters (γ_1, γ_2 and γ_3) with respect to η_1. This model fits an ordinary regression equation to η_1 with three predictors: X_1, X_2 and X_3.

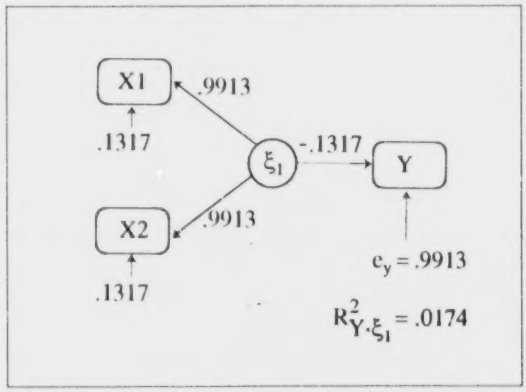
The following example serves to illustrate the specification error problem discussed here. Assume that two exogenous independent variables (X1 and X2) are used to explain one endogenous dependent variable (Y). Table 1 presents the correlation matrix among the variables.

Table 1
The Correlation Matrix for X1, X2 and Y

	X1	X2	X3
X1	1.0000	.9655	.0000
X2		1.0000	-.2606
X3			1.0000

The empirical basis for a latent variable is the observation of correlated manifest variables. The two independent variables in the above illustration are so highly correlated that a researcher could reasonably conclude that they are derived from a common latent variable. X1 and X2 could then be combined to form a highly reliable measure of that latent variable. In this example, the Spearman-Brown prophesy formula yields a reliability estimate for (X1 + X2) of .9824. The correlation matrix also suggests that Y is not very strongly determined by X1 and X2. Figure 3 shows the solved structural model.

Figure 3
A Latent Variable Model for Y

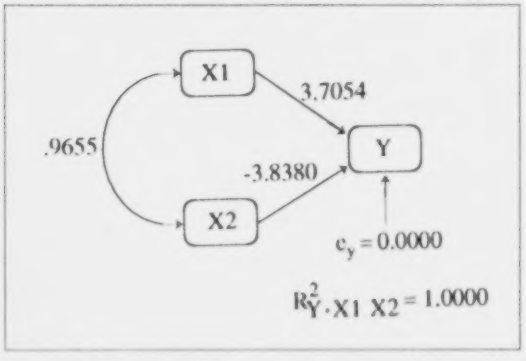


Insidious Structural Errors *(continued)*

Not surprisingly, this solution shows a very strong latent structure linking X1 and X2 with ξ_1 . Factor loadings of .9913 are indeed large. Also a weak structure links ξ_1 with Y $(\gamma_1 = -.1317)$. γ_1 was estimated by regressing Y on a standardized principal factor score for X1 and X2. A researcher might despair at these results since they suggest a very poor model for Y. Before leaving this data set, though, the researcher might attempt another model in which X1 and X2 are not constrained to estimate a latent variable. Figure 4 shows the solution using an ordinary path analysis model on the manifest variables.

Figure 4

A Path Analytic Model for Y



The picture changes markedly when X1 and X2 are freed from their latent variable. This model explains 100 percent of the variance in Y. Clearly, the best model for Y is an ordinary regression model using X1 and X2 as separate predictors. This situation seems paradoxical since there is such a high correlation between X1 and X2.

Insight into this seeming paradox may be had by examining the raw data values in Table 2. X1 consists of consecutive integers ranging from 0 to 20. X2 is the square of X1, and Y = *X1* − .05X2. Y is a perfect quadratic function of X1, and this is why the initial linear structural models did not predict very well. All variables were standardized to produce the solution presented in Figure 4. In raw score terms the model for Y would be:

Table 2

The Raw Data Values for X1, X2 and Y

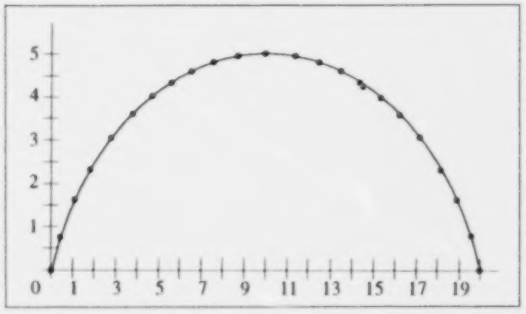
X1	X2	Y
0	0	0.00
1	1	0.95
2	4	1.80
3	9	2.55
4	16	3.20
5	25	3.75
6	36	4.20
7	49	4.55
8	64	4.80
9	81	4.95
10	100	5.00
11	121	4.95
12	144	4.80
13	169	4.55
14	196	4.20
15	225	3.75
16	256	3.20
17	289	2.55
18	324	1.80
19	361	0.95
20	400	0.00

$$Y = 0 + X1 - .05X2 \qquad (4)$$

Figure 5 shows the scatter plot and the line of best fit when Y is regressed on X1. An ordinary regression model using X1 and X2 to predict Y would fit the quadratic relationship between X1 and Y. The model portrayed in Figure 4 was just such a model.

Figure 5

Scatter Plot and Regression of Y on X1



When variables are combined to estimate latent variables, their weighting coefficients are solved which maximize the reliability of estimating the latent variable. An estimate of ξ (ξ') is obtained using a linear combination of the Xs as follows

$$\xi' = \Sigma a_i x_i \qquad (5)$$

The weights, a_i, are the factor scoring coefficients. The important point being that the a_i values are not influenced by the relationships between the ξ and η latent variables. Whereas a path analytic model using manifest independent variables produces weights for the Xs which maximally predict the variance of the Ys or a latent variable estimate using the Ys. So one should not expect a latent variable model for the ξs to be more predictive than a simple path model on manifest variables.

There are certain special conditions that would lead to equivalent solutions for a manifest variable path analysis and a latent variable analysis: (1) the factor scoring weights are proportional to the corresponding least squares path coefficients, and (2) the Xs have no specific variance components which relate to the Ys. But these are onerous assumptions and certainly untenable for most applications.

These assumptions are testable inferentially. An F test could be used to compare the models of Figures 3 and 4. The models in Figures 4 and 3 could serve as the full and restricted models respectively.

Full Model: $$Y = \beta_O + \beta_1 X_1 = \beta_2 X_2 = \varepsilon_f \qquad (6)$$

Where the β coefficients are the regression parameters and ε_f is the error term. The null hypothesis states that the regression

(continued on page 32)

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Insidious Structural Errors *(continued)*

coefficients (β_1) are proportional to the factor scoring weights (a_i)

$$H_O: \beta_1/a_1 = \beta_2/a_2, \text{ or}$$

$$H_O: \beta_2 = \beta_1 (a_2/a_1)$$

And since ξ' is estimated by $\Sigma a_i x_i$ in the model of Figure 3, the restricted model would become

Restricted Model: $Y = \beta_O + \beta_1 (a_1x_1 + a_2x_2) + \varepsilon_r$

$$Y = \beta_O + \beta_1 \xi' + \varepsilon_r \quad (8)$$

Again the β values denote the regression parameters and ε_r represents the error term for the restricted model. The F ratio would have 1 and n-3 degrees of freedom.

Conclusion

This illustration has shown that nonlinear relationships and latent variable assumptions can lead to serious specification errors in structural models. While linear structural analysis is a very convenient and powerful technique, an analyst must be aware of the structural assumptions made when the model is specified. Simpler analyses, such as inspection of scatter diagrams and tests for linearity, are prudent preliminary analyses. Latent variable models should not automatically be fit unless they have been statistically compared to manifest variable models. Because, as this illustration has shown, highly reliable latent variables can produce models with poorer validity than manifest variable models.

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(continued on page 4)

Student Assessment of an Electronic Learning System

By Mark Charles Fissel, Ball State University

Two fundamental problems face institutions installing electronic learning systems: will faculty use the system and will students benefit? This article addresses the latter question. Most faculty and administrators, unlike educational specialists, do not always pause to pose pedagogical questions or prepare evaluatory mechanisms for new learning technologies (Jackson, 1990; Ehrmann, 1988). When Ball State University (21,000 students) installed its "Video Information System" in 1989, it had few paradigms from which to frame evaluatory mechanisms, as it was the first system of its kind to be installed in a university (Fissel, 1990). Nor did the students know what to expect, many of them being first semester freshmen with no college learning experience. This study focused on this "first generation," student opinions being solicited in the first complete course offered entirely with VIS support through a full semester. The student responses were extremely positive. The integrated information system promises to invigorate the university curriculum at a time when state legislatures and trustees are demanding better education for the institutional dollar.

The Instructional Delivery System

The Video Information System permits the fiber-optic distribution of teaching media (video and audio cassettes, optical laser disks, 16mm films, video floppies, etc.) from a central resource facility in the University Library. Computer interfacing is also possible. Using a touch panel equipped with a multi-media control pad, telephone, data jack and wireless, faculty select and control the presentation of audio-visual materials. Information moves, not the equipment. What was once scrawled on a blackboard or overhead projector is presented in a tidier fashion through graphics generated by computers, most often digitally recorded on video floppy disks.

A new video switch (50 inputs by 100 outputs) has been added to the three extant switches, expanding the system's delivery capacity and making operational nearly 300 rooms on campus. Of the 155 rooms exclusively set aside for teaching, 135 now have VIS capability. A specially-designed computer, which can accommodate within minutes faculty requests for material, commands the switch to route a specific visual and/or audio source to a particular classroom, and then relinquishes control of that source to the instructor, at the classroom control box.

VIS reconciles the dualism of analog (video) and digital (computer) instruction. The fact is that faculty do not have to bother with conversion from one platform to another. The media sources, be they analog or digital, are converted to analog when the signals go through the switch. An FM transmitter sends the instructional medium through the fiber as a light signal, which is then converted by the classroom receiver and decodes it to a standard video (NTSC) signal, which is then displayed on the monitor. The students and instructors, however, need not bother with all this. The teacher need not be a technician, and the students receive their instruction without the intrusion of sundry contraptions wheeled into the room.

Not only does the instructor control the media, but oftentimes creates them as well. The system encourages curriculum development. Faculty design and assemble visual databases and draw from them. According to Tom Beatty, Director of VIS, teachers enjoy flexibility in selecting media. "Videotape is our most popular medium, accounting for 58 percent of our use." Beatty adds that video floppy technology has increased in popularity, virtually replacing 35mm slides. As the "digital revolution" proceeds, faculty are initiating computer interfaces, and the use of CD-I has begun.

The Study

The study reported here consisted of more than 300 undergraduates taking a required general studies course in an auditorium previously equipped only with a microphone and overhead projector. VIS was utilized from the very first day of class. At the end of the term, students were asked about the system, including whether or not it helped their note-taking, made the text book more understandable, encouraged their learning, and what advantages and disadvantages they perceived.

In analyzing student responses, one should be aware that the students have no official means by which to determine which classes are supported by VIS. Likewise, faculty could not always count on being fortunate enough to be assigned to an equipped room. Initially 180 receive and control sites were selected throughout the 600-acre university, out of roughly 300 classrooms, labs, conference rooms, and auditoriums available for instructional purposes. Consequently, students cannot choose an "electronic curriculum" nor can faculty be certain that all sections of a given course will be able to be taught with VIS.

The Curriculum and the Questions

The database for the western civilization course consisted primarily of about 850 graphics (diagrams, slides, etc.), recorded on an eight inch optical laser disk. There were made up of maps, illustrations with explanatory graphics (photographs of locations, portraits of historical figures, examples of art work, etc.), computer-

(continued on page 34)

generated diagrams (such as Parliament, the feudal system, etc.), quotations, concepts, and vocabulary. Arranged in linear, chronological succession, the images formed the informational backbone of the course. While the graphics appeared on a 16-foot screen above the auditorium stage, the lectures amplified and embellished the visual material. The optical disk was supplemented by video floppies as well as VHS and SVHS cassettes. Video modules (commercial and custom-made) were inserted in the course at appropriate points.

How students learn through technology is a matter of intense study (Kozma, 1991; Dwyer & Dwyer, 1985; Joseph & Dwyer, 1984; Parkhurst & Dwyer, 1983). This study concentrated on the students' perceptions of electronic learning. Did they think they were learning more? Did VIS help them? Did it aid them in note-taking and text-reading? Showcased are the students' reactions and their opinions of integrated information system teaching and visualized instruction.

Results

Eighty-seven percent of the 314 students believed that the integrated information system helped them learn. Eight percent were neutral. VIS appeared to help undergraduates conceptalize, especially in converting ideas presented verbally into mental images. Students "remembered pictures from VIS" during subsequent examinations. One described himself as a "visual learner" and another felt that the system provided "visual reference" points. As a result, the graphics "made the material easier to remember and study." Undergraduates saw this as a means to better performance and higher grades: "During the test I could sometimes visualize part of the lecture the [exam] question was dealing with." The system facilitated concept-mapping (Novak & Gowin, 1986). If it is true that visual and audio data are stored in different fashions by the human brain, then the combination of traditional lecture with an integrated information system would enable students to retain more information (Paivio, 1971). The evaluations bore out this theory: "When you have visual and hearing at the same time, you will always comprehend more." "Pictures and maps really helped reinforce ideas;" "[VIS] increased my learning capabilities." The system nurtured confidence in students, assuring them that they could learn, as well as actually teaching them. The system, often working in conjunction with the University College Learning Center's Supplemental Instruction program, provided freshmen with guidance in processing, retaining and mastering a bewildering amount of data (Kirkwood, 1992).

Note-taking is one of the first challenges to face the undergraduate, and rarely, if ever, are freshmen told how to take notes. We have assumed that they will develop this skill intuitively (Pauk, 1978). VIS enables freshmen to grasp the essentials of note-taking from the very first day of class, using the monitor as a teleprompter. Ninety-one percent of 316 respondents voiced the opinion that VIS had helped their note-taking, with five percent remaining neutral. Their remarks are self-explanatory: "The needed notes were readily available and easy to read" thanks to large graphics presented on the screen, where they remained while that topic was being discussed. The system "kept notes organized" and "gave more life to notes." They "could see the main idea" and "didn't have to rush" to keep up. Correct spellings were presented at the outset and key vocabulary were highlighted. Electronic learning "helped outline the material." Not the least consideration was the fact they did not have to "decipher" a professor's sometimes unclear handwriting, another clear advantage over the cumbersome and sloppy overhead projectors of old. "Seeing and hearing made note taking easier," again emphasizing the efficiency of synchronized audio and visual teaching. Students were explicit in their opinions:

- "I didn't know what a college prof wanted. VIS made it a lot easier."
- "You could read what was important clearly from anywhere in the class."
- "I could read it if I didn't hear it correctly."
- "I could keep more attention on what the instructor was saying and not miss information."
- "VIS saved time because the instructor didn't have to write things out."
- "A key word or passage on the screen aided in retention because it associated the key word with a picture."
- "Seeing pictures and diagrams helps get me in the mood for note-taking."

Clearly, the system helped de-mystify note-taking for many students. VIS "clafifies and summarizes the main points and makes note-taking and retention easier by visualization." As a technology solution, the instantaneous transmission of custom graphics is fairly simple. Computer-generated graphics can be fashioned quickly through new software programs, and at Ball State, student assistants oftentimes operate the computers and help faculty design curricula. The collaborative experience brings together teachers and students.

VIS makes large lower division lecture courses more palatable to both faculty and students. Scores of undergraduates pointed out that being taught through an integrated information system was "interesting, entertaining and educational." Some were more candid: "this is the first history class I have been able to tolerate—I'm usually bored" and "I hated history, but [VIS] made the class interesting." Perhaps the latter two, unintentionally, are the most encouraging remarks. Larger classes, which are inescapable in the 1990s and beyond due to teacher shortages, are sure to proliferate. Irremediable demographic trends will reduce the number of qualified faculty at a time when enrollments are increasing. Teachers and administrators will be pressured by legislators, alumni and parents demanding a more efficacious educational environment, and inflating classroom enrollments. Quality education can be made compatible with large lecture sections without the alienation of students and the exhaustion of teachers. The system integrates the educational experiences.

Manipulation and arrangement of information remains one of the great challenges to electronic learning (Canelos, et. al.)

1984). Moving masses of data is meaningless if humans cannot handle them (Gazzaniga, 1984; Kahneman, 1973). Students referred to VIS's ability to select randomly within a matter of seconds many of the graphics used during the semester. After class, students would gather at the instructor's lectern and clear up any areas of confusion by accessing graphics from any point in the course. Informal review sessions were supplemented by small discussion sections in classrooms also wired for the VIS. Hence, graduate assistants were capable of summoning up the very same visuals used in class, plus any of their own making.

Video and Reading

Another benefit in regard to information processing came about in regards to textbook reading assignments. Of course, students are supposed to read before attending lectures. But very often the ideal fails to meet reality. During the semester a number of students remarked that the VIS had made the once tedious task of textbook assimilation somewhat more interesting. At the course's end, of 315 respondents, more than half (52 percent) stated that VIS had facilitated their understanding of the textbook. Twenty-five percent were neutral. For many undergraduates, lectures and reading interfaced. This was no trivial accomplishment, as any experienced classroom instructor will attest. Integrating readings with that transpires in class is not easy, and ensuring that students get full value from their reading is equally difficult. According to these students, however, the introduction of materials via integrated information system oftentimes plowed the untilled ground of the text and yielded some unanticipated responses. VIS "put the textbook in a more organized and topic related order;" in other words, the book could be disassembled, so to speak, and restructured according to the topic headings presented in class (Salomon, 1984). Students were given specific pages to read for particular week of the semester, so it was not a great burden to read the book with reference to classroom notes. Through electronic learning the student "knew what to look for while reading." The techniques used by the instructor, the prioritization of data, could be applied to reading assignments. "VIS helped tie lecture and book together," and " made the text easier to understand." Instead of venturing into unknown territory, the classroom excursions into new topics familiarized students with ideas, concepts and subjects they then encountered in reading. "After viewing the material, the text was easier to understand," so that "the two complemented each other." "It visualized what I was reading and made it much clearer in my mind," a student reflected. VIS "outlined the emphasized main points to focus on when reading." "The major points on the VIS were explained in the text," so that reading served to flesh out topics which, due to time constraints, could only be discussed briefly in class. Consequently, "VIS held the material in the textbook together."

One of the more frightening aspects of technology and education is that when most of what young people know comes from video, rather than written, sources, an entire generation may lose touch with the printed word and become techno-illiterates. By interfacing video, lecture, and reading in the classroom, perhaps instructors can inspire students to be accomplished in all modes of communication (Szabo, et. al., 1981). Certainly an information system which makes college reading more attractive to a large segment of the undergraduate population is worthy of further development and support. Support of the faculty is evident, and faculty use of the system continues to rise. "We're seeing an average of forty-eight requests per day now, twice the use of just a year ago. The number of faculty using the system increased twenty-five percent in just one semester," Beatty commented in 1990. By spring semester 1991, an average of fifty-one requests for VIS were processed each regular school day. In the autumn, requests rose to sixty-three. Not only is the system being used to greater potential, a more technologically-innovative faculty is developing (Bruning, 1992).

Future Curricular Applications of Technology

Future assessment of the classroom learning experience must confront some pithy pedagogical questions. Are students swamped by the mass of data? Can VIS hone critical thinking skills? The answer may lie in the digital interfacing of video and computers. A challenge for the future will be to incorporate faculty-controlled, visual information systems with student-manipulated, largely computer-based networks and create a collaborative multimedia education experience (Kean & Kean, 1992; Shore & Daniel, 1992). A secondary sub-menu has been developed with the teacher may access without calling for assistance from the central control area. This menu includes compact disk interactive capabilities. Increasingly, teachers will bring computerized instruction to their students (as a collective body as well as individually) through integrated information systems. The result will be a more "problematic" curriculum, with a dynamic supplied by teacher-student integration through computers. Researchers will have to see if students react positively to this more collaborative relationship with teachers and technology.

Given the fact that students are often more computer literate than their teachers, the intrusion of cooperative computer learning through VIS (or more accurately now - IIS, an integrated information system) may have far more profound effects on curriculum design than was the case during the first few years of the system's operation. Compact disk interactives may take us away from linear, uni-lateral education. CD-I assignments introduced in class could be completed by the students out of class, individually or in small groups (Isbouts, 1992). In addition to the customary textbook, a student might purchase a course CD-I, with "paths" worked into the syllabus. What was once an analog video information system incorporates digital sources (Curtis, 1992).

Having now made possible the inclusion of new forms (and quantities) of instructional material into the classroom, we

(continued on page 36)

Student Assessment (continued)

must now focus on how students assimilate these materials and how the process can enhance reading, writing, and critical thinking skills. Will what was once predominantly a passive medium become more cooperative as it is digitized? Although integrated information system teaching builds upon a traditional pedagogical base, clearly it leads teachers into unexplored areas of curriculum development. As a result, technology makes the human teacher even more important in the achievement of student academic success (Dwyer, 1972; 1987).

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Structural Equation Models Appendix (continued)

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TITLE
   STRUCTURAL EQUATION MODEL EXAMPLE
SPECIFICATIONS
   CAS=200; VAR=9; ME=ML;
LABELS
   V1=EDASP;V2=OCASP;V3=VERBACH;V4=QUANTACH;V5=FAMINC;
   V6=FAED; V7=MOED;V8=VERBAB;V9=QUANTAB;F1=ASPIRE;F2=ACHIEVE;
   F3=HOME;F4=ABILITY;
EQUATIONS
   V1 =  F1 + E1;          V5 =  F3 + E5;          V9=1*F4 + E9;
   V2 =1*F1 + E2;          V6 =1*F3 + E6;          F1=1*F3  +1*F4 + D1;
   V3 =  F2 + E3;          V7 =1*F3 + E7;          F2=1*F1 + 1*F3 + 1*F4 + D2;
   V4 =1*F2 + E4;          V8 =  F4 + E8;
VARIANCES
   E1=1*;                  E5=1*;                  E9=1*;
   E2=1*                   E6=1*;                  D1=1*;
   E3=1*                   E7=1*;                  D2=1*;
   E4=1*;                  E8=1*;
COVARIANCES
   E6,E7=1*;               F3,F4=1*;
MATRIX
   1.024
    .792  1.077
   1.027   .919  1.844
    .756   .697  1.244  1.296
    .567   .537   .876   .632   .852
    .445   .424   .677   .526   .518   .670
    .414   .389   .635   .498   .475   .545   .716
    .560   .564   .893   .716   .546   .422   .371   .851
    .491   .499   .805   .646   .508   .389   .339   .624   .671
DIAGRAM
   E5   E6   E7   E1   E2   ;
   V5   V6   V7   V1   V2   ;
        F3        F1   D1   ;
        F4        F2   D2   ;
   V8   V9   V3   V4   ;
   E8   E9   E3   E4   ;
END
```

Voices in Education

The *Mid-Western Educational Researcher* asked leaders in education to respond to the question:

What effects do you believe the increased use of the National Teachers Examination (NTE) will have on colleges of education and the quality of teachers entering the field?

Good, but I'm talking about the *new* NTE called the Praxis Series which, on paper at this time, looks to be very good.

—David Berliner, Arizona State University

Probably no greater effect than the use of the Scholastic Aptitude Test has had on the curriculum of high schools whose students take that test as part of a colledge admission process. Similarly, I think that the quality of teachers entering the field is unmeasurable and multiply determined.

—Christopher Clark, Michigan State University

I believe that, if the NTE is revised in the direction that its developers intend it to be, there is potential to reshape teacher education in a favorable direction. Instituted practice like teacher education needs a jolt to get change to take place. While initial ramifications may be less optimal, over time, good things could result.

—Lyn Corno, Teachers College Columbia University

The NTE should be regarded merely as a criterion of minimum competence. For this purpose, it is very useful and might readily be used as a substitute for a licensing examination in a given state.

—John Goodlad, University of Washington

I am afraid it may have a negative effect when it comes to the admission of minority teachers. I am not convinced of the positive consequences for "quality."

—Maxine Greene, Teachers College Columbia University

Much the same as its historical effects—not much.

—Gary Griffin, University of Arizona

Norm-referenced admissions tests, because they fail to circumscribe adequately the knowledge and/or skills being assessed, typically have an adverse impact on preparation programs and the students attempting to enter them.

—W. James Popham, IOX Assessment Associates

The NTE will soon be replaced with a much stronger battery of tests, to be called PRAXIS. The battery will include assessment of basic skills, subject matter knowledge and pedagogy, and actual teaching performance. The influence of PRAXIS on colleges of education and on the quality of teachers entering the field will, however, be greatly dependent upon how PRAXIS is used and the standards that are set.

—Andrew Porter, University of Wisconsin-Madison

On the one hand, the improved NTE could clarify what a teacher ought to know and bring greater clarity to the cognitive learnings expected of teachers. On the other hand, it could reinforce the current lack of attention to the role of the teacher as a moral exemplar and a contributor to character formation.

—Kevin Ryan, Boston University

The effects will focus on the quality of courses offered in teacher preparation programs and the field experiences related to coursework. The accountability for the final product has intensified in many colleges of education throughout the country.

—Jane Stallings, Texas A&M University

The NTE is a standardized test and measures only a small part of the teacher's performance. Each institution should develop a plan for helping the student learn to be an effective teacher which involves much more.

—Ralph Tyler, Center for Advanced Study in Behavioral Sciences

Some gearing of teacher-preparation curricula toward content and skills represented on the NTE tests and perhaps some improvement in quality.

—Herbert Walberg, University of Illinois-Chicago

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local, and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1993 dues of $10 for students and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to:* Charles C. Anderson, Jr., MWERA Executive Officer, 1332 Southwind Drive, Northbrook, IL 60062; phone (708) 564-4796.

MWERA Membership Application

Name (first, mid. initial, last) _____

Mailing address _____

City _____ State _____ Zip _____

Home phone ( ) _____ Office phone ( ) _____

Highest degree _____ Area of specialization _____

Institution/employer _____

MWERA division preferences _____

_____

AERA member? _____

If applying for student membership, please include a copy of your student ID.

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William E. Klingele, dean
College of Education
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MID-WESTERN EDUCATIONAL RESEARCHER

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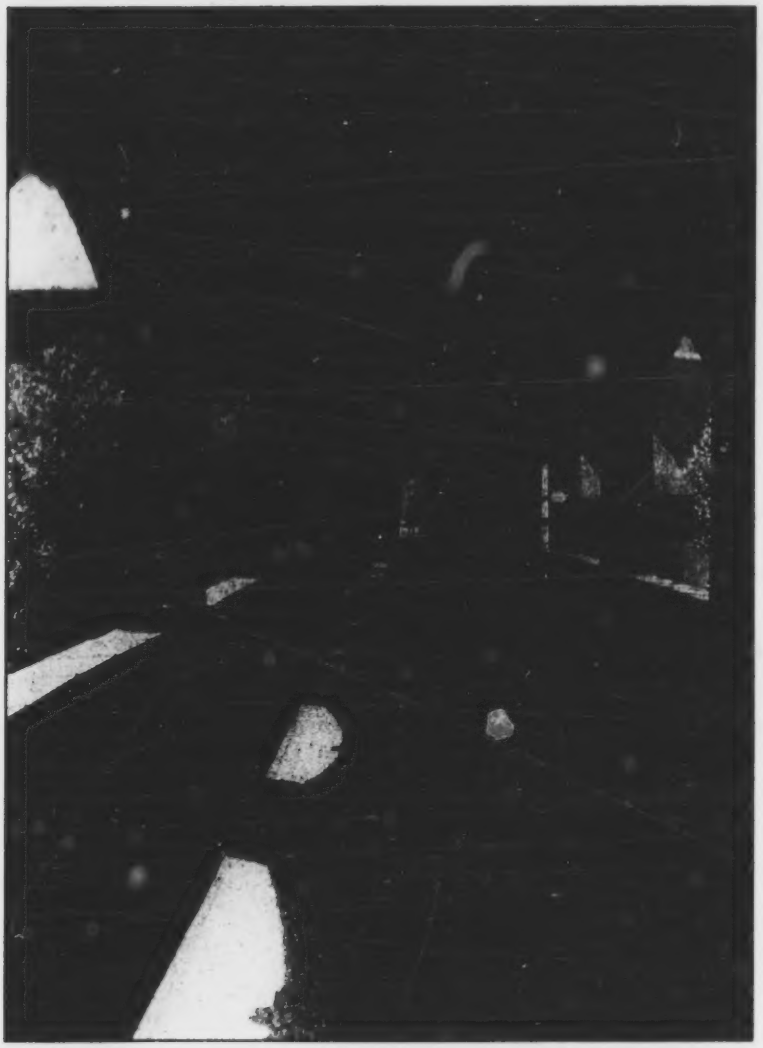

Special Program Issue

October 13-16, 1993

ON THE COVER

Chartered in 1858, ***Iowa State University of Science and Technology*** is the land grant institution of the first state to accept the terms of the Morrill Land-Grant act in 1862. As Iowa State has adapted the land-grant philosophy to the changing needs of the approaching 21st century, it has become a university with special teaching responsibility in science and technology, extension education, and research and scholarship to advance the frontiers of learning.

The covered walkways of Lagomarcino Hall surround its garden-like courtyard and provide a contemplative backdrop for the Psychology Department, located in the building's west wing. The Psychology Department encompasses active research and graduate programs in individual differences, school psychology, and applied cognitive psychology including science learning and education, the development of reasoning skill, and human/equipment interfacing. Of particular note, the Office of Precollegiate Programs for the Talented and Gifted (OPPTAG) in the department is home to the Study of Mathematically Precocious Youth, initiated by Julian C. Stanley, and now directed by Camilla P. Benbow and David Lubinski. SMPY is conducting a 50-year longitudinal study of intellectually talented individuals which is now in its third decade. Through programs such as the Iowa Talent Search, ACES, CY-TAG, and the Iowa Scholars Academy, OPPTAG provides services to 6,000 gifted youth yearly.

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double space (including quotations and references) on 8½x11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out for the first mention. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor editorial changes in order to facilitate a concise clear article. The author will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Gregory J. Marchant
Educational Psychology
Teachers College
Ball State University
Muncie, IN 47306-0595

or

Isadore Newman
Educational Foundations and Leadership
College of Education
The University of Akron
Akron, OH 44325-4205

The Mid-Western Educational Researcher (ISSN 1056-3997) is published quarterly by the Mid-Western Educational Research Association through The University of Akron. The fall issue serves as the annual meeting program. Second-class postage paid at Akron, Ohio, and additional mailing offices. POSTMASTER: Send address changes to Charles Anderson, 1332 Southwind Drive, Northbrook, IL 60062.

Program Orientation

Greetings! Welcome to the 1993 MWERA Program. This year's agenda incorporates the new with the old. You'll find many traditional events that make our conference so special, and you'll discover some exciting new offerings, too. So mark your calendars to join us October 13-16 at the historic Bismarck Hotel in Chicago. Here is what you have to look forward to this year.

Invited Speakers

Invited Address

Wednesday, Oct. 13, 1993 8:00-9:00 p.m.
Medill Room
Chair: **Thomas Andre**
John Bransford, Vanderbilt University
Macro-contexts for Problem-based Learning: Design Principles for Enhancing Learning and transfer.

Opening Keynote Address

Thursday, Oct. 14, 1993 9:30-10:30 am
Maximilian Room
Chair: **Thomas Andre**

John Bransford, Vanderbilt University
Research on Macrocontexts for Problem-based Learning

Luncheon Keynote Address

Friday, Oct. 15, 1993 12:35-1:25
Walnut Room
Chair: **Ken Kiewra**

Jere Brophy, Michigan State University
Trends in Research in Teaching

Invited Address

Friday, Oct. 15, 1993 9:00-10:25 am
Parlor D
Chair: **Ayres D'Costa**

Benjamin D. Wright, University of Chicago
Composition Analysis

Division F Invited Presentation

Thurs. Oct. 14, 1993 2:30-3:35 p.m. Parlor D
Chair: **Don Castle**

Gregory Gerrich, Ashland University
Responsibility of Schools of Higher Education in Providing Leadership in Restructuring Public Education

Division D Invited Presentation

Friday, Oct. 15, 1993, 4:30-6:00 p.m.
Chair: **Robert S. Barcikowski**

Frank Baker, University of Wisconsin, Madison
Equating Tests Under Item Response Theory

Division B & G Invited Presentation

Friday, Oct. 15, 1993, 2:00-2:55 p.m.
Chair: **Joan Timm**

Christine Sleeter, University of Wisconsin, Parkside
An Analysis of the Critiques of Multicultural Education

Workshops

Workshops require preregistration and an additional nominal fee that is shared between MWERA and the presenter. The fee is kept as low as possible to encourage MWERA participation. Fees help defray the cost of putting on the workshops. All workshops participants must be registered for the conference. Register early, workshops with insufficient registrants by Oct. 5, 1993 will be dropped.

Wed. Oct. 13, 1993, 1:00-5:00 p.m. Parlor A
Workshop 1

Robert Ziomek, Director
Department of Program Evaluation and Research Services, ACT.

New Products and Programs from ACT.

Cost: free [Note: Participants must register for the conference]

Informational workshop presenting to participants the new products developed by ACT in response to recent trends in education such as authentic assessment and describing the areas and type of research that ACT is conducting to meet the challenges facing K-12 education in future.

Wed. Oct. 13, 1993, 1:00-5:00 p.m. Parlor B
Workshop 2

Wendy L. Shapiro, Kent State University
Rebecca Clemente, Ball State University

Metamorph: Computer Support for Qualitative Research

Cost $20.00

This workshop provides training in the use of Metamorph. Metamorph is a computer application that works with unstructured text to scan documents, manuals, and unstructured records. Metamorph uses pattern matching and set logic to help structure text databases. It allows rapid, unstructured data searching, in-context relevance judgment, and "clipping" of selected information into a file.

Wed. Oct. 13, 1993, 1:00-5:00 p.m. Parlor C
Workshop 3

Kathleen M. Long, Indiana University

Students as Evaluators of Self, Peers, and Curriculum & Instruction

Cost: $15.00

After a brief discussion of theory and research supporting students as evaluators, Dr. Long will describe the process of empowering students as assessors of their own learning experiences, the products of peers, and the curriculum and instruction in any classroom/school. Several alternative assessment models will be shared, and workshop participants will develop an evaluation tool pertinent to their own needs. An assessment instrument created by Dr. Long and thirty "at-risk" students that was recently utilized--with faculty permission-- to assess the curriculum and instruction of a 1300 student high school will be provided.

Wed, Oct. 13, 1993, 1:00-5:00 p.m. Parlor D
Workshop 4

Richard M. Smith, University of South Florida

Item and Person Analysis with the RASCH Model.

Cost: $30.00

Note: Includes materials normally costing $99.00 when given at other workshops.

This workshop will provide participants with the opportunity to explore the use of RASCH measurement models to analyze item and person performance for both dichotomous and rating scale response formats. These analyses supplement information currently available from a Rasch calibration program and allow the direct investigation of a variety of response patterns for persons (guessing, response styles, etc.) and items (misfit, differential item familiarity, etc.) and provide information that can be used to improve the performance of items and the quality and interpretability of person response patterns. The differences in interpretation of overfit and underfit for the dichotomous and rating scale models and the interrelationships between item and person misfit will be discussed. The theoretical basis for these analyses and practical applications of the procedures will be presented. PC-based programs and textbooks used in workshop demonstrations will be provided to participants. Prior experience with Rasch calibration programs may be helpful, but is not necessary.

R7.12 Thurs. 4:00-6:00 p.m. Parlor F
Workshop 5

Carole Newman, University of Akron
Lynn Smolen, University of Akron
Isadore Newman, University of Akron

Becoming More Competitive In An Interview: Portfolios As An Authentic Representation of Teaching Skills.

Cost: $15.00

In an increasingly competitive job market, teacher candidates have to create a strong positive impression that will allow the interviewer to distinguish them from the hundreds of other applicants vieing for a limited number of teaching positions. This workshop will discuss portfolios as a vehicle for presenting a unique and authentic view of the candidates teaching abilities. It will also provide information for the teacher candidate on what administrators want to see in a portfolio, how to use a portfolio during an interview, and how to write reflective statements and a philosophy of education to help the prospective employer better interpret the candidate's accomplishments and potential. Insights into this process are based upon recent studies conducted by the authors, which involved the surveying of administrators in sixty-five rural, urban, and suburban school districts.

F7.9 Thurs. 2:30-5:30 p.m. Maximilian Room
Workshop 6

Jeffrey B. Hecht, Illinois State University
Sara B. Wills, Illinois State University
David J. Dwyer, Illinois State University
Nicole K. Roberts, Illinois State University

FLEXTEXT: A Methodology for the Qualitative Analysis of Textual Data

Cost: $15.00

Researchers using written surveys tend towards easily coded and analyzed restricted response items. Many situations, however, could benefit from the addition of narrative response items. Unfortunately, the analysis of narrative response items can be exhaustively time consuming and difficult to master. New computer software reduces the work while increasing the useability of the data. This workshop will acquaint attendees with one successful computer methodology. The workshop will begin with a review of the theoretical and historical traditions employed in narrative response analysis. The FLEXTEXT computer program will be demonstrated using real examples. Attendees will participate in the coding and analysis of their own responses to a survey instrument. The workshop handbook will include a session summary, reference citations, and a road map showing the easy linkage among the data entry, form validation, coding, initial reporting, and analysis in software packages. Attendees will experience the issues involved in narrative response item analysis, and participate in using one computer-based technique that can simplify this task.

F6.7 Fri. Oct. 15, 1993. 3:00-6:00 Parlor E
Workshop 7

Kisubi, Alfred
Muench, Karen E.

Using the Arts in the Classroom

Cost: $15.00

This workshop appraises creativity as an inborn or natural tendency which if so appraised in the training of any professional, most especially human service workers, can be used therapeutically in the healing of emotional disturbances and disordered attitudes. In addition, it can be used to encourage wholeness in the individual because we believe creativity helps unite left and right brain hemispheres. The workshop presents suggestions for more inclusive approaches to teaching through the effective use of the creative process, because we believe that creativity builds on the innate facet of every person's inheritance Eros, the will to live. For to create is in some sense to be born again. The workshop is concerned with substantive issues of methods and analysis, with extending the boundaries of thoughts, with widening its scope of investigation, with sharpening perspectives and clarifying purposes through the arts. Emphasis on participation and involvement and maximum intensity of enjoyment and helping participants sharpen their perspective responses to the work of art.

F7.2 Fri. Oct. 15, 1993 4:30-6:30 p.m. Parlor A
Workshop 8

Nicole K. Roberts, Illinois State University
Jeffrey B. Hecht, Illinois State University

VTLOGANL: A Method for the Qualitative Analysis of Videotaped Data

Cost: $25.00 includes cost of videotape distributed to participants

The decrease in cost and convenience of video cameras and recorders has led to an explosion of use among social science researchers. Unfortunately, the dominant modes of analysis of such data require transcripts of spoken words and written descriptions of scenes, people, and movement. In the quest for data reduction and conceptual understanding, these analytical methods ignore the richness of images and sounds captured on videotape and lose tape's richness for communicating research findings. The workshop will introduce participants to a new way of conceptualizing and executing the analysis of data recorded on videotape. The workshop will begin with an overview of traditional methods for video data analysis. The VTLOGANL (Video Tape Logging and Analysis) computer program will then be highlighted using actual field video and coded logs. The workshop give participants the opportunity to use the video cameras, microphones, tripods, lights, recorders/players, and the VTLOGANL computer program. Each participant will receive a workshop handbook and videotape summarizing the session, relevant citations, the data acquisition, coding and analysis method, and the terms and equipment used in video-based research.

S3.10 Sat. 9-11 & 11-1. Room 501
Workshop 9 & Workshop 10. Two 2-hour workshops presented back-to-back.

Thomas S. Parish, Kansas State University
James J. McCluskey, University of Oklahoma

Ways to Enhance Teacher Effectiveness and Student Motivation

Cost: $20.00

This workshop presents valuable information and insights regarding identification of problems that currently exist in classrooms. Several teaching strategies are shared that have been found to effectively motivate students at various levels of education. Explanations and research support of these strategies are provided. In addition to describing possible problems associated with poor student performance and ways to ameliorate them, the workshop will also present a teacher evaluation instrument that should be helpful in discerning if teachers are effectively getting through to their students in various ways.

R6.10 Thurs. 1:00-2:25 Rm. 501

New Member Workshop -- *Publishing, Not Perishing! Winning at the Publication Game.*

Open to new members first, others admitted as room allows.

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Special Activities

We are especially pleased to have offerings for Graduate Students this year. MWERA encourages students to present their research. Certificates will be presented to students who author/co-author and present a research paper and attend the General Business Meeting scheduled for Friday, 10:30 – 11:40 a.m.

The 1993 program has several social activities planned. **A New Member Welcome**, Thursday at 8:30 a.m. has been organized by **Carmen R. Giebelhaus, Ohio State University**. It will be hosted by the Executive Committee. First-time conference attendees will be introduced to the MWERA organization and to the conference proceedings.

Midwest Hospitality greets all conference participants Thursday-Saturday from 8:00 a.m. to 9:00 a.m. Meet old and new friends alike and enjoy coffee and rolls.

The traditional **Cracker Barrel Social** is on Thursday evening from 6:00 p.m. to 7:00 p.m.

Friday night is the **President's Reception**, beginning at 9:00 p.m. in the Regency Suite.

The President's reception will be followed by an early morning roll call for the third annual **Fun Run/Walk/Crawl Along the Lake Shore.** This light exercise route is approximately 2 miles long near the Chicago Yacht Club. President Kenneth A. Kiewra, University of Nebraska, is again the organizer and exuberant guide for the event.

Summary of Events

Wednesday, October 13

- 1:00-5:00 p.m.
  Preconference Training Workshops
- 8:00-9:00 p.m.
  Invited Address, **John Bransford,** Medill Room

Thursday, October 14

- 8:00-9:00 a.m.
  Midwest Hospitality Maximilian Room
- 8:30- 9:20 a.m.
  New Member Welcome Lincoln Room
- 9:30-10:30 a.m.
  Keynote Address, John Bransford, Maximilian Room
- 10:30-11:50 a.m.
  Concurrent Sessions
- 12:10-12:55 p.m.
  Brown Bag Lunch-Division Meetings
- 1:30-5:55 p.m.
  Concurrent Sessions
- 6:00-8:00 p.m.
  Cracker Barrel Social Maximilian Room

Friday, October 15

- 8:00-9:00 p.m.
  Midwest Hospitality Maximilian Room
- 9:00-10:30 p.m.
  Concurrent Sessions
- 10:00-4:00 p.m.
  Exhibits
- 10:30-11:40 a.m.
  General Business Meeting/Graduate Student Awards
- 11:50-1:25 p.m.
  Luncheon: Keynote Address, Jere Brophy
- 1:30-6:00 p.m.
  Concurrent Sessions
- 9:00 p.m.-????
  President's Reception

Saturday, October 16

- 7:00 a.m.
  Fun/Run/Walk/Crawl Along the Lake Shore
- 8:00-9:00 a.m.
  Midwest Hospitality
- 8:00-Noon
  Concurrent Sessions

1993 Program Committee

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Thomas Andre, Iowa State University

Program Assistant

Bonnie Smith, Iowa State University

Associate Program Chairs
For Private Organization/Industry Coordination
Gene Kramer, American Dental Association
For Workshops
Gary D. Phye, Iowa State University
Bruce G. Rogers, University of Northern Iowa
For Convention Recruitment
Jack Snowman, Southern Illinois University
For Local Coordination and Exhibits
Sharon McNeely, Northeastern Illinois University
For New Member Welcome
Carmen R. Giebelhaus, Ohio State University

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Carol B. Furtwengler, Wichita State University
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Linda S. Behar, University of Florida
C. **Gregory Schraw**, University of Nebraska
Jennifer J. Fager, South Dakota State University
D. **Robert S. Barcikowski**, Ohio University
Jeffrey B. Hecht, Illinois State University
E **Thomas E. Midgette**, University of Arkansas
Eddie Glenn, University of Arkansas
F. **Donald R. Castle**, Ashland University
Gary D. Shank, Northern Illinois University
G. **Joan S. Timm**, University of Wisconsin-Oshkosh
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I. **Richard C. Smith**, University of South Florida
J. **Kim K. Metcalf**, Indiana University
Martha A. Wilson, Capital University
K. **Donald L. Haefele**, Ohio State University
Josue Cruz, Jr., Ohio State University
Deborah L. Bainer, Ohio State Univ.–Mansfield

Midwest Hospitality Coordinator

Charles Anderson, ETS (Ret.) and MWERA, Executive Officer

Social Coordinator

Adria Karle-Weiss, University of South Florida

Convention Recruitment Committee

Tom Andre, Steve Benton, Bob Brennan, Roger Bruning, Alice Corkill, Beverly Dretzke, Nelson DuBois, Orpha Duell, Frank Farley, CarolAnne Kardash, Ken Kiewra, Joyce Killian, Judy Lambiotte, Joel Levin, Dick Lipka, Bill Loadman, Anne Marie Palincsar, Barbara Plake, Jane Zaharias

Associate Divisional Program Chairs

Division E.
Nudie E. Williams, University of Arkansas
Jean Harper, Dayton, Ohio
J. Harris Moore, Student Development Office
Mary Ann Flowers, Cleveland State University
Nelson Strobert, Gettysburg Lutheran Seminary

A special thank you to all who reviewed proposals, to Charles Anderson (Executive Officer), and to Executive Committee Members Plake, Kiewra, Pugh, Mueller, McNeely, Anderson, Marchant, and Newman.

Association Executive Committee

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Barbara Plake, Ohio State University

President
Kenneth A. Kiewra, University of Nebraska

President-Elect
Richard C. Pugh, University of Nebraska

Vice-President
Thomas Andre, Indiana University

Secretary
Ralph O. Mueller, University of Toledo

Member-at-Large
Sharon McNeely, Northeastern Illinois University

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Charles Anderson, ETS (Ret.)

Co-Editors Mid-Western Educational Researcher (ex officio) (term ends 1993)
Gregory J. Marchant, Ball State University
Isadore Newman, University of Akron

Editors-Mid-Western Educational Researcher
Ayres G. D'Costa, Editor, Ohio State University
Susan M. Brookhart, Associate Editor, Duquesne University
John R. Surber, Associate Editor, Univ. of Wisconsin, Milwaukee

Association Council

Term Expires 1993
Sonya Blixt, Kent State University
Alice J. Corkill, University of Nevada-Las Vegas
Mary Ann Flowers, Cleveland State University
Sarah E. Peterson, Northern Illinois University
John T. Pohlmann, Southern Illinois University
E. Jane Williams, Columbus Public Schools
Jane Zaharias, Cleveland State University
Term Expires 1994
Linda Bakken, Wichita State University
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Paula J. Dupuy, University of Toledo
Carolanne M. Kardash, University of Missouri-Columbia
Thomas Knapp, Ohio State University
Thomas E. Midgette, University of Arkansas
Rose Mary Scott, Univ. of Wisconsin--Parkside

Election Results

By-Law Approval: Yes

New Officers

Vice President: **Gregory J. Marchant**, Ball State University
Secretary: **Ralph O. Meuller**, University of Toledo

Association Council (1993-95)

Jennifer J. Fager, South Dakota State University
Stephen G. Jurs, University of Toledo
Leslie E. Lukin, University of Missouri
Kim K. Metcalf, Indiana University
Isadore Newman, University of Akron
Marlene Schommer, Wichita State University
Mary R. Sudzina, University of Dayton

Business Meetings

MWERA Division Meetings
Thursday, October 14
12:10-12:55 p.m.

MWERA Association Council and Executive Committee
Thursday, October 14
4:30-5:50 p.m., Room 501

MWERA General Business Meeting
Friday, October 15
10:30-11:40 a.m., Maximilian Room

MWERA 1993 Program Committee and 1994 Program Chair
Thursday, 2:30-3:25 p.m. Parlor B

MWERA Executive Committee
Saturday, October 16
1:00-3:00 p.m., Regency Suite

How to Get to the Conference

When coming to Chicago, attendees have a variety of transportation options. (See options below.)

O'Hare Airport to the Bismarck Hotel (3 options)

1) Take a CTA train to downtown for about $2.00. Catch the train in the basement of Terminal 3. Take an A or B line. Get off at the Lake Transfer station. This is in the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block. This is the fastest way during rush hours, and the cheapest.
2) Take the Continental Bus for $12.50 one-way or $22.00 round trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.
3) Take a cab for around $20.00. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7-10 a.m., 3-7 p.m.), the ride could take a hour or more. Tips average fifteen percent.

Midway Airport to the Bismarck Hotel (3 options)

1) Take a CTA bus and train to downtown for about $2.00. Catch the Cicero Bus 54B (headed North) on Cicero Avenue, across from the airport. Ask for a transfer for the train when you board. Get off at 22nd and Cicero. Catch the Douglas-O'Hare line train going East (to the Loop). Get off at the Lake Transfer station. This is the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block.
2) Take a Continental Airport Bus for $9.50 one-way or $16.75 round trip. No reservations are required from the airport. See the agent at the booth for tickets.
3) Take a cab for around $18.00. See O'Hare information above regarding time.

Driving But NOT Parking Downtown (3 options)

From the North or West

1) Park near a Metra station and take a Metra Train downtown. From the Metra station you will need to take a cab to the hotel. Depending on where you board the train, your ride can be inexpensive. For details call (312) 836-7000. Be certain to find out about return trips, especially on weekends.
2) Park at O'Hare remote (follow highway signs to O'Hare), take a shuttle into O'Hare and follow any of the O'Hare options. Remote parking is inexpensive.
3) Park at Kiss and Ride at either the Cumberland or the Harlem Avenue exits off of I-94 (the Kennedy). Take the CTA train (See O'Hare option 1). Parking is inexpensive.

From the South or East

1) Park near a Metra station and take a Metra Train . See 1 above.

Driving And Parking Downtown (4 options)

- Listen to the Radio (670 or 780 a.m.) for traffic reports.
- **Remember**, rush hours are 7-10 a.m., 3-7 p.m. in both directions. Travel in the city takes time. There is a lot of construction. Plan at least two hours from the near suburbs to downtown. Plan one-half hour (minimum) in downtown traffic.

1) Coming in on I-94 from the **North:** I-94 junctions with the Kennedy at Irving Park Road. Continue downtown. If traffic is good, it should take 40 minutes from the junction as the Kennedy is under construction. Beyond the Ohio Street exit, get in the right-hand lane. Exit at Washington Street going East. At LaSalle, make a left, go one block and make a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15.00/day) or have the hotel park it. There is NO street parking.
2) Coming in on I-90 from the **Northwest:** Follow I-90 downtown. This becomes the Kennedy. Follow directions of 1 above for exits and parking.
3) coming in on I-90/I-90 from the **Southeast:** Take the I-90 (Skyway) in. The toll will be about $2.00, but it will save you a lot of time. Get in the Express Lanes to downtown. When you approach the LOOP follow the signs saying I-94, Kennedy and Wisconsin. Exit at Monroe Street and head east. At LaSalle, take a left, then a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15/day) or have the hotel park it.
4) Coming from the **South or Southwest:** Take the I-57 in. This junctions with I-94 and I-90. Read No. 3 above.

If you are arriving some other way, or have any questions, please call Sharon McNeely at (312) 794-2788 **before your trip. She will be happy to help.**

Conference Registration Information

General Information

1. The Conference sessions begin Wednesday, October 13, 1993 and ends Saturday, October 16, 1993. Please make travel arrangements accordingly.

2. Pre-register for the conference using the following registration materials. Be certain to register for the conference, make hotel reservations, and if interested, register for one or two conference training workshops. Workshop descriptions enclosed.

3. All conference participants must be members of MWERA . Please pay 1993 dues if you have not already done so. Now is an excellent time to pay 1994 dues as well. Membership in MWERA includes a subscription to the *Midwestern Educational Researcher*.

4. On-site registration and packet pickup are in the lobby of the Bismarck Hotel at the following times:

Wednesday, October 13, 1993	11:00 a.m. - 4:00 p.m.
Thursday, October 14, 1993	8:00 a.m. - 4:00 p.m.
Friday, October 15, 1993	8:00 a.m. - 4:00 p.m.
Saturday, October 16, 1993	8:00 a.m. - 10:00 a.m.

5. Please bring this program with you to the conference. A replacement copy will cost $3.00.

6. Please share your conference program and registration materials with co-authors, colleagues, and students and invite them to attend.

Mid-Western Educational Research Association
Annual Meeting Registration Form

Please print or type all information

Name _____
Institution _____
Complete Mailing Address _____
_____
EMAIL _____
FAX _____

Required of New Members Only

Highest Degree: _____
MWERA Division Preference: _____
(See Page 9)
Major Area of Specialization: _____
Telephone: Office (____) _____ - _____
Home (____) _____ - _____

Is this your first MWERA conference? Yes _____ No _____

ANNUAL MEETING REGISTRATION FEE. Check your membership status below: *Amount*

_____ Graduate Student (pre-registration fee **$30**, on-site **$35**)
_____ Regular Professional (pre-registration fee **$45**, on-site **$55**)
_____ Non-member (pre-registration fee **$50**, on-site **$60**) $ _____

1993 MEMBERSHIP DUES. **$18** Regular Member; **$10** Graduate Student $ _____

1994 MEMBERSHIP DUES. $18 Regular Member; $10 Graduate Student $ _____

CONFERENCE WORKSHOP(S). Indicate your choice(s) below:

Wed. 1:00 p.m.
WS 1$20.00 _____ or WS 2 $20.00_____ or WS 3 $15.00_____ or WS 4 $30.00 _____ $ _____

Thur. WS5 4:30 p.m. $15.00 _____, or Thur. WS6 3:00 p.m. $15.00 fee _____ $ _____

Fri. WS7 3:00 p.m. $15.00 _____, or Fri. WS8 4:30-6:30 p.m. $25.00 _____ $ _____

Sat. WS9&WS10 Sat. 9:00-1:00 $20.00 (total) _____

TOTAL AMOUNT DUE $ _____

Registrants requiring special dietary needs for the Friday Luncheon should describe those needs and enclose with this registration form.

Please make your check payable to: Mid-Western Educational Research Association (MWERA)
Mail this completed registration form and your check by October 6, 1993 to:

Charles Anderson
1332 Southwind Drive
Northbrook, Illinois 60062

Hotel Reservation Form Bismarck Hotel (312) 236-0123 171 West Randolph Street
Chicago, Illinois 60601
Mid-Western Educational Research Association Conference (October 13-16, 1993)

Please reserve:

- _____ Single room(s): **$50.00**
- _____ Double Room(s) (Double Bed or Twin Beds): **$60.00**

- Date and Time Arriving: _____ (a.m.) (p.m.)
- Date and Time Departing: _____ (a.m.) (p.m.)

Name(s) _____ Affiliation _____
Address _____

Hotel Reservation must be mailed to the Bismarck Hotel by October 5, 1993

Mid-Western Educational Research Association
Membership Application

1. NAME: (First Name, Last Name)

2. MAILING ADDRESS:

3. ZIP CODE

4. HOME PHONE NUMBER

5. OFFICE PHONE NUMBER

5. INSTITUTION/EMPLOYER: _____

6. POSITION: _____ 7. DEGREE: _____

8. MWERA DIVISIONS OF PRIMARY INTEREST: _____ AERA MEMBER? _____

9. NEW MEMBERSHIP REQUEST: _____ RENEWAL: _____

10. FAX number _____ 11. EMAIL address _____

10. Dues for the calendar year (January through December) are $18.00 (Regular Member), $10.00 (Grad Student) & $180 (Life Membership). Make your check payable to: Mid-Western Educational Research Association (MWERA). Send completed application and check to:

Charles Anderson
MWERA Executive Officer
1332 Southwind Drive
Northbrook, Illinois 60062

MWERA Divisions

A. Administration
B. Curriculum Studies
C. Learning and Instruction
D. Measurement and Research Methodology
E. Counseling, Human Development and Special Education
F. History and Philosophy of Education
G. Social Context of Education and Motivation
H. School and Program Evaluation
I. Professional and Medical Professions
J. Postsecondary Education
K. Teaching and Teacher Education

Summary of Concurrent Sessions by Room

	Rooms								
Time/Day	Medill	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincoln	Maximilian
Thursday									
10:30	A	B	C	D	E	F	G	I	K
1:00	A	B	C	D	E	K	G	H	K
2:30	C	B	D	J	K	A	D	K	
3:30		E							
4:00									
4:30	K	Genl.	K	C	D	K		K	
Friday									
9:00	K	A	B	K	Genl.	E	F	Exhibits	G
1:30	J	H	D	K	E	Genl.	K	Exhibits	
2:00								Exhibits	G
3:00	K		C	D	K	K		Exhibits	G
4:30	K		J	D	F	E			K
Saturday									
8:00				K			F		
9:00	K	A	D	E	G	Genl.	K	I	C
10:30	K	J	K	C	G	Genl.	K	F	B

Suggestions to Presenters

To make conference sessions as helpful and enjoyable as possible, the Executive Committee asks presenters to please follow these guidelines:

1. Send a completed copy of your paper to the Session Discussant so that it is received no later than September 30, 1993. Discussants are not obligated to discuss papers received after this date.
2. Bring at least 40 copies of your paper to the conference. People interested in your paper should receive a copy at the conference.
3. Make overheads and handouts that are attractive and readable.
4. Plan to present, rather than read, your paper in the time allotted.
5. Because of purchase costs, storage space, and maintenance issues, equipment other than overheads will not be provided.

Conference Program

Sessions are listed by day, time, and location. The division is indicated where appropriate. Institutional affiliations are listed in the indices. There is a presenting author index, a chair index, a discussant index, and co-author indices. There is a daily summary at the start of each day.

Wednesday October 13, 1993

Workshop 1. 1:00-5:00 PM Parlor A
Robert Ziomek, Director, Department of Program Evaluation and Research, ACT
New Products and Programs from ACT
Cost: Free [Note: Participants must register for the conference]

Workshop 2 1:00-5:00 PM Parlor B
Wendy L. Shapiro, Kent State University
Rebecca Clemente, Ball State University
Metamorph: Computer Support for Qualitative Research
Cost: $15:00

Workshop 3 1:00-5:00 PM Parlor C
Kathleen M. Long, Indiana University
Students as Evaluators of Self, Peers, AND Curriculum & Instruction
Cost $15.00

Workshop 4 1:00-5:00 PM Parlor D
Richard M. Smith, University of South Florida
Item and Person Analysis with the RASCH Model.
Cost: $30.00
Note: Includes materials normally costing $99.00 when given at other workshops.

Invited Address - Medill Room

Wednesday, Oct. 13, 1993

8:00-9:00 PM

Chair: Thomas Andre

Macro-contexts for problem-based learning: Design Principles for Enhancing Learning and transfer.

John Bransford

Vanderbilt University

	Session Overview Schedule for Thursday, October 14, 1993										
	Division										
Time	A	B	C	D	E	F	G	H	I	J	K
8:00-9:00	Midwest Hospitality--Maximilian Room										
8:30-9:20	New Member Welcome Lincoln Room										
9:30-10:25	Opening Keynote Address John Bransford Vanderbilt University--Maximilian Room										
10:30-11:50	√	√	√	√	√	√	√		√		√
12:10-12:55	Brown Bag Lunch -- Division Meetings										
1:00-2:25	√	√	√	√	√		√	√			√√
2:30-3:25	√	√	√	√√						√	√√
3:30-4:25					√						
4:30-5:55			√	√							√√√
6:00-7:00	Cracker Barrel Social										

R1.1 Midwest Hospitality Coffee and Friends
8:00-9:00 AM -- MAXIMILIAN ROOM
Organizer: **Charles Anderson**, ETS (Ret.) and MWERA, Executive Officer

R2.1 New Member Welcome
8:30-9:20 AM LINCOLN ROOM
Host: **Executive committee**
Organizer: **Carmen Giebelhaus**, Ohio State University
First-time conference attendees are invited to sip a cup of coffee while being introduced to the organization, the officers, and the conference. Special Badges will identify new members and first-time attendees.

R3.1 OPENING KEYNOTE ADDRESS
9:30-10:30 am Maximilian Room
Chair: Thomas Andre
Program Chair, MWERA
Iowa State University
Welcome: Ken Kiewra
President, MWERA
University of Nebraska

John Bransford, Vanderbilt University
Research on Macrocontexts for Problem-based Learning

R4.1 Issues in Administration 2
10:30-11:50 p.m. -- MEDILL ROOM
Division A Paper Session
Chair: **Hazel Loucks**
Discussant: **Donald Hendricks**
Six keys to success in systematic school restructuring: Learning from case studies
In-Sook Lee,
Guiding framework for clarifying core values in systematic school restructuring
In-Sook Lee
Quality improvement implementation in schools: An analysis
Willis J. Furtwengler
Differential perceptions of elementary school teachers and principals about the appropriateness of recess time and their alternative suggestions
Connie Nolte

R4.2 Literacy Issues
10:30-11:50 am Parlor A
Division B Paper Session
Chair: **Charlotte Haselhuhn**
Comparison of words correct and correct letter sequence scoring procedures for curriculum based spelling measures
Alex Thomas
Voices of students speak a critical discourse
Thomas E. Oldenski
Justice and equality: The missing components of American History textbooks
Michael H. Romanowski

R4.3 Epistemological Beliefs
10:30-11:50 p.m. Parlor B
Division C Alternative Format Session
Chair: **Marlene Schommer**
Discussant: **Orpha Duell**
Searching for the big picture of epistemological beliefs: The first town meeting
Marlene Schommer

R4.4 Cognitive Measurement
10:30-11:50 am
Division D Paper Session
Chair: **Dennis Leitner**
Discussant: **Isadore Newman**
The validity of concept maps for assessing cognitive structure
Robert S. Michael, Daniel J. Mueller
Essay tests and cognitive style of the reader
Clinton I. Chase
Look inside the black box: A proposal for weighting test items for cognitive processing demands
Dennison Bhola, Barbara S. Plake
Teachers' perceptions of the adequacy of their own teaching skills one to ten years after graduation: An example of scale construction
Cynthia L. Velotta, William E. Loadman

R4.5 Special Education and Special Populations
10:30-11:50 p.m. Parlor D
Division E Paper Session
Chair: **James Mullins**
An investigation of urban school psychologists' perception of their future role and function in relationship to four areas of the school reform movement
David J. Goodman, Ronald R. Morgan
Special educators' metaphorical descriptions of instructional practical knowledge
Mark P. Mostert
Family functioning analysis of families with disabled infants and toddlers: Implications for PL 99-457 and teacher training
Linda S. Behar, Vivian Correa, Cheryl Beverly

R4.6 Division F Invited Presentation
2:30-3:25 p.m. Parlor D

Chair: Don Castle

Responsibility of schools of higher education in providing leadership in restructuring public education
Gregory Gerrich, Ashland University

R4.7 Family and School Relationships
3:00-4:25 p.m. MAXIMILIAN ROOM
Division G Paper Session
Chair: **Shirley S. Wilbert**
A study to explore the inter-relationships among factors affecting substance abuse of secondary school students
C. V. Nelson, Van E. Cooley, Jay C. Thompson
An examination of relationships of parent's actions toward their children
James R. Necessary, Thomas S. Parish
Parents' actions: Are they related to children's self-concepts, evaluation of parents, and to each other?
Thomas S. Parish, James R. Necessary
Conflict strategies and resolutions: Peer conflict in an integrated early childhood classroom
Heidi L. Malloy, Paula McMurray

R4.8 Rasch Measurement
10:30-11:50 p.m. -- LINCOLN ROOM
Division I Symposium
Applications of Rasch measurements in professional certification/licensure
Chair and Organizer: **Richard M. Smith**
Using the RASCH Model to set standards
Benjamin D. Wright
Computer adaptive testing for certification
Betty Bergstrom

R4.9 New Roles for Teachers
10:30-11:50 p.m. -- MAXIMILIAN ROOM
Division K Symposium
Chair: **Patricia Hulsebosch**
Organizer: **Elaine C. Koffman**
New roles for teachers: Curriculum developer, researcher, and educator-of-future teachers
Elaine C. Koffman, Anna Austin, Nancy Green, Syvilla Rushdan, Jolie Lasaine, Nadine Lee

R5.1 Brown Bag Division Meetings
12:05-1:00 p.m.
Division A Parlor A
Division B Parlor B
Division C Parlor C
Division D Parlor D
Division E Parlor E
Division F Parlor F
Division G *MAXIMILIAN ROOM*
Division H *BLACKHAWK ROOM*
Division I *MAXIMILIAN ROOM*
Division J *LINCOLN ROOM*
Division K *MEDILL ROOM*

R6.1 Issues in Administration
1:00-2:25 p.m. – MEDILL ROOM
Division A Paper Session
Chair: **Rebecca W. Llibler**
Discussant: **Robert S. Estabrook**
Get involved in the legislative process: A survey of Ohio legislators
William Hughes
Principals and the first amendment: The case of icons in public schools.
Lyndon G. Furst
The reform movement: A fifty-state survey of state action for administrator evaluation
Carol B. Furtwengler, David Hurst, Nancy P. Gibons
Effects of personal and school factors on teacher turnover: A discriminant analysis
Hyun-Seok Shin

R6.2 Curriculum Issues
1:00-2:25 p.m. Parlor A
Division B Paper Session
Chair: **Eva Weisz**
A content analysis of middle school team meetings
Carla C. Shaw
Knowledge requirements in doctoral curriculum and instruction programs
Linda S. Behar
Field testing as an issue in curriculum development
Ruth A. Shafer
Elementary curriculum integration: A content analysis of leading practitioner journals
Gloria T. Alter

R6.3 Predicting Performance
1:00-2:25 p.m. Parlor B
Division C Paper Session
Chair: **Gregg Schraw**
Discussant: **Gregg Schraw**
Investigating different raters' perception of the components of the foreign language speaking skill
Micheline B. Chalhoub-Deville
The reading practices and study behaviors of developmental and nontraditional community college students
M. Cecil Smith, Robert J. Keller
Predicting performance on a test of general education skills
Timothy J. Sewall

R6.4 Person Measurement
1:00-2:25 p.m. Parlor C
Division D Paper Session
Chair: **Paula Woehlke**
Discussant: **Ralph Mueller**
The consistency of stimulated recall interviews in data gathering and analysis
Mark P. Mostert
Comparing methods for reducing person misfit
Rita K. Bode
Assessing discipline effects in faculty ratings of student written essays
Laura L. Barnes, Ron Petrin, Dale Fuqua, Namok Bryant, Kenneth McKinley, Becky Johnson
Interpreting the W, B, and Sato caution indexes
Ayres G. D'Costa

R6.5 Critical Research Issues in Counseling
1:00-2:25 p.m.. Parlor D
Division E Symposium
Chair: **Eddie E. Glenn**
Organizer: **Thomas E. Midgette**
Critical research issues in counseling: Cultural and clientele diversity
Thomas E. Midgette, Eddie E. Glenn, Betty S. King, Lynn Siebring, James Mullins, Richard L. Allen

R6.6 Teacher Roles
1:00-2:25 p.m. Parlor E
Division K Paper Session
Chair: **Doug Smith**
Practicing what they teach: Should teachers 'Do as they say?'
Lynda R. Wiest
Practitioner's View
Leon J. Zalewski
Extended wait-time I and university student achievement
Orpha K. Duell

R6.7 Moral Reasoning and Cultural Values
1:00-2:25 p.m. Parlor F
Division G Paper Session
Chair: **Mary Ann Flowers**
An ethic of sharing: Perspectives on the dispositions of elementary students to share
Melissa M. Bogan, Thomas J. Lasley
Autonomous morality of older adolescents and the influence of implicit intention of an action
Rich Hofmann
Apply Kluckhohn's value orientations in multicultural education: A structural approach to understanding diversity
Joan S. Timm

R6.8 Non-Traditional High School
1:00-2:25 p.m. -- LINCOLN ROOM
Division H Symposium
Chair: **William Loadman**
Discussant: **Daniel Mueller**
Organizer: **Micheline B. Chalhoub-Deville**
Conceptualizing, implementing and evaluating a non-traditional high-school program
William Loadman, Craig W. Deville, Judy Hummel, Rich Houchen

R6.9 Alternative Certification
1:00-2:25 p.m. -- MAXIMILIAN ROOM
Division K Symposium
Promises and perils of alternative certification: Lessons from a mid-career teacher training program
Chair: **Susan M. Hegland**
Meeting the needs of the professional seeking certification: Identifying and removing the academic barriers
Susan M. Hegland,
Distance learning and assessment systems: Portfolios, qualitative observations, quantitative ratings, interviews
Valerie Samuels
Alternative certification: A student view
Nikki Keraus
But how good are they? A word from cooperating teachers and supervisors
Delora Hade

R6.10 NEW MEMBER WORKSHOP
1:00-2:25
Publishing, Not Perishing!
Winning at the Publication Game.
Journal Editors and Publishing Gurus discuss the process of developing a a productive research and publishing program. Bring a draft article and receive a presubmission review back from a MWERA Researcher Editor. New members have priority in this session. Other members may attend if space is available

R7.1 Metacognition
2:30-4:25 p.m. -- MEDILL ROOM
Division C Paper Session
Chair: **Daniel Robinson**
Discussant: **Daniel Robinson**
Practice effects on learners' collaboration of performance
Rayne S. Dennison, Gregory Schraw
What do you think? College students' awareness of their own ideas during class
Jean W. Pierce, Adel Sultan
A comparison of three presentation methods of teaching statistics
Abbot L. Packard, Glen A. Holmes
A pilot study of urban middle school students' perception of their efficacy with respect to academic achievement
Vicky L. Timme, Jerry L. Jinks, Josephine Logan-Woods

R7.2 Research on Literacy
2:30-3:25 p.m. Parlor A
Division B Paper Session
Chair: **Eva Weisz**
Heightening students' understanding of problem-solution relationships: A method for enhancing comprehension of word problems
Carol A. Stevens
A description of a research program for enhancing literacy in the workplace
Edward E. Gordon, Ronald R. Morgan, Judy J. Ponticell

R7.3 1993 Program Committee, Divisional Chairs, and 1994 Program Chair.
2:30-3:25 Parlor B

R7.4 Addressing the Needs of Exceptional Learners
2:30-4:25 p.m. Parlor C
Division J Paper Session
Chair: **Kim K. Metcalf**
A comparison of alternatives for enhancing the algebra skills of adult college students
Peggy G. Woodard, David E. Suddick, John H. Meyer
The cognitive levels of the educational programs offered adult vocational instructors: A study of adult vocational education instructors in joint vocational schools and community education career centers in central Ohio
Patrick J. Squire, Larry Miller
Noncognitive variables and academic performances of minority university freshman
Hing Kwan Luk, Lucy C. Jacobs
An evaluation of the honors program at College of Lake County
Carole Bulakowski

R7.5 Teaching
2:30-3:25 p.m. Parlor E
Division F Symposium
Chair and Organizer: **Linda S. Behar**
Teaching and the art of war
Gregory J. Marchant
The shifting assumptions of curriculum history: Defining a field of research
McDonald Joyce
Polanyi's tacit knowing and education
Robert M. Boody

R7.6 Issues in Administration
2:30-3:25 p.m. Parlor E
Division A Paper Session
Chair: **Will Place**
Discussant: **Sally Childs**
An early warning system for schools: An examination of Illinois' financial watch list
William L. Sharp
A follow-up study of shared training for school-based instructional leadership
Edie L. Holcomb
Technology in education: Attitudes, opinions, and knowledge of community and school personnel
David S. Hurst
Relationship between leadership and decentralization: A multi-university study
Dianne Brown-Wright. Isadore Newman, Larry G. Bradley
Predictors of microcomputer use by faculty in higher education
Caryl A. Hess

R7.7 Power Analyses
2:30-4:25 p.m. Parlor F
Division D Paper Session
Chair: **Ralph Mueller**
Discussant: **Bruce G. Rogers**
A comparison of the power of statistical tests of independence in contingency tables with small samples
Cynthia G. Parshall, Jeffrey D. Kromrey
Comparative power of meta-analysis in the Solomon four-group design
Shlomo S. Sawilowsky, D. Lynn Kelly Barry S. Markman
Investigation of power using F approximations for Hotelling's trace and Pillai's trace
Ronald S. Elliot, Robert S. Barcikowski
Effects of unreliability of the concomitant variable on t-power of four between-subjects designs
Janet K. Sheehan, Ritu Khanna

R7.8 Teaching Teachers
2:30-4:25 p.m. -- LINCOLN ROOM
Division K Symposium
Teaching teachers: Selected perspectives of undergraduate special education teacher preparation
Chair and Organizer: **Mark Mostert**
Practical issues in writing and teaching case studies to special education students
Mark P. Mostert
Philosophy, instructional methodology, training, and goals of teachers of the behaviorally disordered
Paul Beare
The quality of IEP Objectives and their relevance to instruction for students with mental retardation and behavioral disorders
Susan Severson

R7.9 Workshop 6
2:30-5:30 p.m. -- MAXIMILIAN ROOM
Cost $15.00. Preregistration Required
FLEXTEXT: A Methodology for the Qualitative Analysis of Textual Data
Jeffrey B. Hecht, Illinois State University
Sara B. Wills, Illinois State University
David J. Dwyer, Illinois State University
Nicole K. Roberts, Illinois State University

R7.10 New Approaches in Counseling
3:30-4:25 p.m. Parlor B
Division E Paper Session
Chair: **Betty S. King**
The effect of the Canfield Learning Style Inventory (LSI) and intrusive counseling methods
Isaiah Sessoms
A description and a comparative evaluation of a social skills training program
Sheila Morrison, Ronald R. Morgan
Group conflict: Relationship of group member conceptual level, conflict verbal tactics, and group development
Carolyn R. McRoy
The rolw of teachers in promoting muticultural education in South Africa
Zodwa Dlamini

R7.11 Student Teaching Supervision
3:30-4:25 p.m. -- LINCOLN ROOM
Division K Paper Session
Chair: Ronald Marso
Cooperating teachers and university supervisors: The state of the art in the supervision of student teaching
Donald A. Williams, Jeff Peck, Doug Smith
What do we know about effective student teaching supervision?
Victor Hernandez, Maria Eiio Galvez

R7.12 Workshop 5
4:00-6:00 p.m. Parlor F
Cost $15.00 Preregistration Required
Becoming More Competitive in an Interview: Portfolios as an Authentic Representation of Teaching Skills
Carole Newman, University of Akron

R8.1 Technical Computers
4:30-5:55 p.m. – MEDILL ROOM
Division K Paper Session
Chair: **Jeffrey Peck**
Educational resources on the Internet
Kwan-Yau Lam
Kansas middle and high school computer use survey
Bill Yates

R8.2 The Semiotic Experience
4:30-5:55 p.m. Parlor A
MWERA Paper Session
Chair: **Gary Shank**
Chaos theory and educational research: A semiotic encounter
Edward S. Wood
Qualitative analysis of a synthetic culture: A methodological inquiry
Suzanne C. MacDonald, Isadore Newman, Kyle Waite

R8.3 Early Childhood Teacher Preparation
4:30-5:55 p.m. Parlor B
Division K Paper Session
Chair: **Paula McMurray**
Antecedent experiences in early childhood teacher education: The hidden treasure
Amy B. Palmeri

R8.4 Metacognition: Integrating Theory & Practice
4:30-5:55 p.m. Parlor C
Division C Alternative Format Session
Chair: **Eileen J. Wood**
Metacognition: Integrating theory and practice
Eileen J. Wood, Greg Shraw, Alice Corkill, Tina Willoughby, Jacqui Specht

R8.5 Advanced Measurement
4:30-5:55 p.m. Parlor D
Division D Paper Session
Chair: **Betty Bergstrom**
Discussant **Barbara Plake**
Parameter invariance and factorial invariance
Dennis Hocevar, C. Tina Huang
Confirmatory factor analysis of the multidimensionality of Marsh's students' evaluations of educational quality (SEEQ)
Dennis Hocevar, Hung Chi
A comparison of maximum likelihood generalized least-squares, and weighted least-squares estimation procedures using ordinal data
Wendy C. Naumann-Sandoval, Deborah L. Bandalos
Effects of measurement error on the pretest covariate in three designs of experiments using ANCOVA
Irina R. Soderstrom, Tianqi Han

R8.6 Early Childhood Education
4:30-5:55 p.m. Parlor E
Division K Symposium
Current practices in early childhood education
Chair: **Beverly Gulley & Margeret Matthias**
Organizer: **Deborah Moberly**
Alternative assessment methods
Beverly Gulley, Barbara Myers
Curriculum planning and facilitation of learning
Deborah Moberly
Teacher evaluation and staff development
Paula Woehlke
The effect of parent involvement on parental expectations for children's educational achievements
Linda Fiock
A comparative study of observed language behaviors of pre-kindergarten children at risk of academic failure in the context of a literacy-enriched play environment
Margaret Matthias

R8.7 Synergy
4:30-5:55 p.m. – LINCOLN ROOM
Division K Alternative Format Session
Synergy: Capitalizing on collaboration
Bernita L. Krumm, Jennifer Fager, Gary Steinley, Barbara Kleinjan, Patricia Hacker, Marcy Reisetter, Kathryn Penrod

R8.8 Association Council and Executive Committee Meeting
4:30-5:55 p.m. – Room 501
Executive Committee members and Association Council members should plan on attending

Session Overview Schedule for Friday October 15, 1993											
	Division										
Time	A	B	C	D	E	F	G	H	I	J	K
8:00-9:00	Midwest Hospitality Maximilian Room										
9:00-10:25	√	√	√	√	√	√	√		√		√
10:30-11:40	General Business Meeting - Maximilian Room										
11:50-1:25	MWERA Luncheon Walnut Room Lobby Level										
12:30-1:25	Luncheon Keynote Address Jere Brophy Michigan State University										
1:30-2:55				√	√			√		√	√√
2:00-2:55							√				
3:00-4:25			√	√			√				√√√
4:30-5:55				√	√	√				√	√√
9:00-?	President's Reception--Regency Suite										

F1.1 Midwest Hospitality
8:00-9:00 am -- MAXIMILIAN ROOM

F2.1 Student Teaching II
9:00-10:25 p.m. -- MEDILL ROOM
Division K Paper Session
Chair: **Terry Corwin**
The problems of student teachers
Sonja J. Smith
Peer conferencing and its implications upon preservice teacher training
Connie L. Bowman
Senior intern's concerns toward a supervisory innovation: The integrated systems model for professional development
Diane Nelson
Clinical supervision--control or empowerment: Has the paradigm changed?
Susan R. Cramer, Ruth Koskela

F2.2 Translating Theories and Research
9:00-10:25 am Parlor A
Division A Symposium
Translating theories and research into administrative practice: Implications for school leadership
Chair: **Charles D. Almo**
Organizer: **Martin H. Jason**
Discussant: **Frances Carroll, Richard Smith**
Perspectives on the value of theory for school administrator and students in leadership preparation programs
Charles D. Almo
Applying theory through action research
Martin H. Jason
Applying theories to the doctoral internship in educational administration
Tom Van Dam
An exploration of instructional approaches to bridging the gap between theory and practice in educational leadership courses.
Yiping Wan

F2.3 Content and Instructional Strategies
9:00-10:25 Parlor B
Division B Paper Session
Chair: **Linda S. Behar**
Effects of LOGO-based instruction on student attitudes
Mian M. Yusuf
A comparison of student-constructed versus teacher-constructed learning activities in phase two of the STAP cycle
William J. Gnagey, Nora Y. Navarro
Countdown: Using cable television technology
Diane Schiler, Doroothy Giroux, Catherine Thomas,

F2.4 Teacher Education Curriculum
9:00- 10:25 MAXIMILIAN ROOM
Division K Paper Session
Chair: **Susan M. Hegland**
An alternative in teacher preparation delivery: The challenge of planning
Kathleen Maury
Using needs assessment during student teaching: A preliminary study using a needs assessment instrument to train pre-service teachers
Charles K. Runyan, Rozanne H. Sparks, Richard Lipka

F2.5 MWERA Invited Presentation
9:00-10:25 am Parlor D

Chair: Ayres D'Costa

Composition analysis
Benjamin D. Wright

F2.6 African American Male Academics
9:00-10:25 am Parlor E
Division E Symposium
Chair and Organizer: **Thomas E. Midgette**
African-American male academics: Male and female differences and similarities
Thomas E. Midgette, Eddie E. Glenn, Nudie E. Williams, Mary Ann Flowers, Clara A. New, Isaiah Sessom, Nelson Strobert

F2.7 Race and Education
9:00-10:25 am Parlor F
Division F Paper Session
Chair: **Valerie Samuels**
Race and education and its negative impact beyond the classroom for blacks
Jennifer N. Humphries
The city normal schools of Cleveland and Akron, Ohio
Melinda J. Kline

F2.8 Equity/Equality/Education
9:00-10:25 p.m. MAXIMILIAN ROOM
Division G Symposium
Chair and Organizer: **Linda S. Behar**
Visions of equity and equality in education
Linda S. Behar, Geneva Gay, Martin Haberman, Ronald R. Morgan, Allan C. Ornstein

F3.1 General Business Meeting
10:30-11:40 am--MAXIMILIAN ROOM

F4.1 MWERA Luncheon
11:50-1:25 p.m.WALNUT ROOM

F4. 2 Luncheon Keynote Address
12:35-1:25 p.m.WALNUT ROOM

Chair: Richard Pugh

Trends in Research in Teaching
Jere Brophy, Michigan State University

F5.1 Job Satisfaction
1:30-2:55 p.m.MEDILL ROOM
Division K Paper Session
Chair: **Clara A. New**
Professional self esteem of teacher educators
Richard J. Reynolds
Teacher career development concern stages of traditional and nontraditional-aged beginning secondary teachers
Mary K. Bendixen-Noe
Predicting teacher job satisfaction
Inyoung C. Kim, William E. Loadman
Methodological approaches in teacher job satisfaction
Inyoung C. Kim, William E. Loadman

F5.2 Enhancing School Practice
1:30-2:55 p.m. Parlor A
Division H Paper Session
Chair: **Corenna C. Cummings**
Dick and Jane revisited: Personal reflections of ability grouping
Mary Ann Wham
Integrating continuous quality improvement principles in educational leadership program
Susan R. Cramer, Scherie E. Lampe
Chasing elephants with butterfly nets: Initial evaluation efforts of a large teacher education program by two graduate students
Steven Koch, Lawrence Rogien

F5.3 Scaling and Measurement
1:30-2:55 p.m. Parlor B
Division D Paper Session
Chair: **Isadore Newman**
A note on the accuracy of passing scores set by the Angof and Nedelsky methods
Michael J. Subkoviak, Todd M. Franke
Potential errors in the use of probabilistic methods to determine cheating on multiple choice examinations
David J. Dwyer, Jeffrey B. Hecht

F5.3 Con't
A journey through the world of scale equating: An example using the national data base for scale transformation
Susan A. Granoff, William E. Loadman
Item parameters estimated by structural equation modeling and item response theory
Dennis Houvar

F5.4 Student Teaching
1:30-2:55 p.m. Parlor C
Division K Paper Session
Chair: **Ruth Koskela**
Improving teacher education field experiences: Seeking collaborative feedback
Alice L. Young, Ron Copenhaver
Cooperating teacher feedback to student teachers: Current practices and future directions
Elizabeth A. Wilkins, Donna M. Post
The mechanical third ear device: A student teaching supervision alternative
Carmen R. Giebelhaus

F5.5 Human Development: Psychosocial Aspects
1:30-2:55 p.m. Parlor D
Division E Paper Session
Chair: **Linda Bakken**
Psychosocial characteristics of persisters and nonpersisters in undergraduate teacher education programs
Elaine Baker, Sue Dowd, Jane Belt, James Tramill, Linda Bakken
Preservice teacher education students: Their development of mature psychosocial characteristics
Jane Belt, Sue Dowd, Elaine Baker, James Tramill, Linda Bakken
Psychosocial differences between elementary and secondary preservice teacher candidates
Sue Dowd, Elaine Baker, Jane Belt, James Tramill, Linda Bakken

F5.6 Getting Started with the Basic Coding of Textual Data
1:30-2:55 Parlor E
MWERA Alternative Format Session
Chair: **Rich J. Hofmann**
Discussant: **Rich J. Hofmann**

F5.7 Preservice Teachers
1:30-2:55 p.m. Parlor F
Division K Paper Session
Chair: **Deborah Bainer**
A longitudinal study of student perceptions of classroom management courses using a simulation methodology
Douglas M. Brooks, Robert Shearer
A comparative analysis of specifically prepared and generally prepared middle school preservice teachers
Theresa M. Stahler
Instructional preferences of preservice teachers at three different levels of academic aptitude
Charles E. Skipper
Students' perspective on teacher preparation
Joy D. McCullough

F5.8 Divisions B & G Invited Presentation
2:00-2:55 p.m.MAXIMILIAN ROOM

Chair: Joan Timm
Discussant: Rose Mary Scott

An analysis of the critiques of multicultural education
Christine Sleeter
University of Wisconsin, Parkside

F6.1 Portfolio Assessment
3:00-4:25 p.m.MEDILL ROOM
Division K Paper Session
Chair: **Connie Bowman**
A summary of published research: Classroom teachers' and other educators' attitudes toward and support of teacher-made testing
Fred L. Pigge
Using a teaching portfolio as an evaluation tool with student teachers
Karen M. Dutt, Mary A. Kayler
The use of teaching portfolios in teacher education
James E. Green, Sheryl O. Smyser
Developing competency in preservice training programs through portfolio assessment
Marilyn K. Urquhart, Lana M. Danielson

F6.2 Outcomes-based Education
3:00-4:25 p.m. Parlor A
MWERA Paper Session
Chair: **Delora Hade**
An assessment of teachers' and administrators' attitudes and knowledge about outcome-based education, quality performance accreditation, and staff development
Carol B. Furtwengler, James Carroll, Wilis Furtwengler, Louise C. Herrington, Melva Owens
Secondary journalism programs: A "natural" for outcomes-based education
Laura Schaub
Fire up for OBT: A paradigm shift as clear as Glasser
James J. McCluskey, Thomas S. Parrish

F6.3 Conceptual Learning and Assessment
3:00-4:25 p.m. Parlor R
Division C Paper Session
Chair: **Cecil Smith**
Using concept maps as tools for authentic assessment
Marcia Reisetter, Gary Steinley
Graphic organizers facilitate more integrated writing and better study strategies
Daniel H. Robinson
The importance of sound during silent reading
Daniel H. Robinson
Concept mapping in the junior high school science classroom as it relates to student achievement and the examination of conceptual change
Jodi J. Haney, Carrie Bradley, Liz Berkoltz

F6.4 Testing in Practice
3:00-4:25 p.m. Parlor C
Division D Paper Session
Chair: **Bruce Rogers**
Using standardized test scores to predict outcomes on statewide proficiency tests
Michael H. Wronkovich, Isadore Newman, James Robinson
Setting an optimum time limit for a computer-administered test
Dennison S. Bhola, Barbara S. Plake
Computerized adaptive testing: The theory and the reality
Ellen R. Julian, Anthony Zara, Carol Hartigan
Opinions of measurement specialists regarding appropriate testing and grading practices for teachers
Tracy Thorndike-Christ, James Impara

F6.5 Educators and Research
3:00-4:25 p.m. Parlor D
Division K Paper Session
Chair: **Kathleen Maury**
Looking back at teacher education in MWERA: Direction for the future
Joy D. McCullough
The research productivity of teacher educators in private institutions
Linda B. Morrow
Perceptions of the research component in master's level teacher education programs
Ruth David, Marjorie R. Leon

F6.6 Teacher Education National Database
3:00-4:25 p.m. Parlor E
Division K Symposium
National database: Differences across teacher education institutions
Chair and Organizer: **William E. Loadman**
The data profile: Descriptive characteristics of recent graduates contained within the national database on teacher follow-up
William E. Loadman
Relationship of gender and teaching level with self rating of teaching skills
Susan M. Brookhart
Comparing three methodologies of scale equating
Susan Granoff
The history, purpose, and quality of the national database
Beverly Klecker

F6.7 Workshop 7
3:00-6:00 p.m. Parlor F
Cost $15.00. Preregistration Required
Using the Arts in the Classroom
Alfred Kisubi,
Karen E. Muench

F6.8 Perceptions of Institutional Contexts
3:00-4:25 p.m.MAXIMILIAN ROOM
Division G Paper Session
Chair: **Mary R. Sudzina**
Inservice teachers' and future administrators' awareness of culturally responsive pedagogy for the 1990's and beyond
Linda D. Hayes
Are professors' behaviors, students' behaviors, and student self-concepts related to one another?
Thomas S. Parish, Robert V. Parish
Professors' actions and attitudes: How do they relate to another?
James R. Necessary, Thomas S. Parish
Preservice and inservice teacher differences in their perceptions of personal teaching efficiency
Mary Ann Flowers

F7.1 Teaching and Collaboration
4:30-5:55 p.m.MEDILL ROOM
Division K Paper Session
Chair: **Rebecca Turner**
Homework and cooperative learning: One-year follow-up study of a classroom field experiment
Harvey C. Foyle, Lawrence Lyman
Views of classroom teaching: Comparing the thoughts of not-so-masterful and masterful teachers
Rozanne Sparks, Richard P. Lipka
Profiles of interaction among novice, reassigned, and experienced elementary teachers
Deborah L. Bainer, Cheryl K. Didham
The university/school partnership: Clinical teaching faculty
Carmen R. Giebelhaus, Steven Hoffman, Judith Snyder

F7.2 Workshop 8
4:30-6:30 p.m. Parlor A
Cost $25.00, Preregistration required
VTLOGANL: A Method for the Qualitative Analysis of Videotaped Data
Nicole K. Roberts, Illinois State University
Jeffrey B. Hecht, Illinois State University

F7.3 Non-Traditional Instruction in Higher Ed Division
4:30-5:55 Parlor B
Division J Paper Session
Chair: **Deb Bainer**
Comparative effects of on-campus and off-campus clinical experiences for preservice teachers
Ronen Hammer, Kim K. Metcalf
A comparison of preservice teachers' perceived effectiveness of a clinical laboratory experience and subsequent student teaching experiences
Zaine Ridling
Development of guidelines for planning university class presentations in distance education
Richard C. Pugh

F7.4 Division D Invited Presentation
4:30-6:00 p.m. Parlor C

Chair: **Robert S. Barcikowski**

Equating Tests Under Item Response Theory
Frank Baker, University of Wisconsin, Madison

F7.5 Diversity in Education
4:30-5:55 Parlor D
Division F Roundtable
Chicago Research Ensemble of Northern Illinois University

F7.6 Assessment Issues
4:30-5:55 p.m. Parlor E
Division E Paper Session
Chair: **Lynn Siebring**
Ego identity status and the structure of students' daily college experience
Susan C. Root
Evaluating the relationship between college students' vocational congruence, academic success, and career maturity: Career counseling implications and future directions
Darrell A. Luzzo
Personality and job characteristics: Relation to job satisfaction and absenteeism
Walter C. Buboltz
Utilization of the Child Behavior Checklist as it relates DSM-III-R classifications: A concern for interpretability
Paul J. Britton, Cynthia D. Smith, Isadore Newman

F7.7 Personalities of Teachers
4:30-5:55 p.m.MAXIMILIAN ROOM
Division K Symposium
The personalities of pre-service teachers as measured by Cattell's 16 PF: Estimates of factor structure stability, norms, and relationship to program choice and Holland types
Chair and Organizer: **Isadore Newman, James Schuerger**
The factor structure of preservice teachers' personalities as measured by the 16PF: Estimates of stability across time and gender
Joseph Marth
Cattellian variables in predicting education specialization
Madhavi Warrick
Personality dimensions of education majors: Holland type and the 16 PF
James DeLamatre

Session Overview Schedule for Saturday October 16, 1993											
	Division										
Time	A	B	C	D	E	F	G	H	I	J	K
8:00-9:00	Midwest Hospitality Maximilian Room										
8:00-8:55						√					√
9:00-10:25	√		√	√	√		√		√		√
10:30-12:00		√	√			√	√			√	√√
1:00-3:00	Executive Committee Meeting--Regency Suite										

S1.1 Fun Run, Walk, Crawl
7:00-8:00 am Bismarck Lobby

S2.1 Midwest Hospitality
8:00-9:00 am--MAXIMILIAN ROOM

S2.2 External Expertise
Division F Symposium Parlor F
Applying external expertise to education.
Chicago Educational Expertise Consortium

S2.3 Diversity/Multicultural Considerations
8:00-8:55 Parlor C
Division K Paper Session
Chair: **Mary Ann Flowers**
Cultural diversity and the changing family: A survey of middle grades' teachers
Ervin F. Sparapani
Some social implications of teacher testing for minorities in education
Donald J. Reyes, Alan M. Voelker
Effects of the minority mentorship project on its participants
Donald Collins, A. Branch, M. Bailey, E. Ogbeide
Multicultural education in physical education: A study of knowledge, attitudes, and experiences
William G. Sparks, K. L. Butt, M. Pahnos

S3.1 Teacher Evaluation
9:00-10:25 am--MEDILL ROOM
Division K Paper Sessions
Chair: **Sue Brookhart***Teachers' and principals' perceptions of teacher evaluation practices*
Donald L. Haefele, Bret Barnard*Radical educational reform: Reactions of teachers on the firing line in northern Kentucky*
Suzanne G. Cortez, Dale Lawver
Multiple methods of assessing pre-service and practicing teachers: A study examining unified assessment procedures based on program goals
Marcia F. Reisetter, Jennifer Fager, Gary Steinley
Classroom evaluation approaches as perceived by prospective teachers
Robert M. Boody, Bruce G. Rogers

S3.2 Issues in Administration 5
9:00-10:25 am Parlor A
Division A Paper Session
Chair: **Pamela Barnet**
Discussant: **Jason H. Martin**
A faculty consistency pay program
John W. Fraas
The effect of educational administrator level and location on perceived need for student assessment knowledge and the importance of assessment tasks
Lisa A. Moore, James C. Impara, Barbara S. Plake
State-financed school integration in metropolitan Milwaukee: Fiscal impacts and efficient effects
Sang-Jin Ban
Residence hall security, as perceived by students and parents at two public universities
Sara B. Wills, Edward R. Hines

S3.3 Validity Issues
9:00-10:25 am Parlor B
Division D Paper Session
Chair: **Sharon F. Schattgen**
Discussant: **Paula Woehlke**
A construct validation of the DCAT
Caryl Cox, Tianqi Han
An investigation of the relationship between essential dimensionality of broader and specific content categories of items of the Secondary International Mathematics Study
Dennis Hocevar, Yu-Chung Wang

S3.4 Parenting and Child Research
9:00-10:25 am Parlor C
Division E Paper Session
Chair: **Richard Allen**
Discussant: **J. Harris**
Yes, there is an optimal parenting style for single parents who want to promote achievement in their children
James J. Johnson, Elmer A. Lemke, Julia Neunreiter
The relationship between parenting styles, self-esteem, and personality
Elmer A. Lemke, Audra Bima, David Smith, James J. Johnson
Correlation between Type A behavior and levels of violence
Joe Stronsick, Kim Bernardi

S3.5 Motivation Research
9:00-10:25 am Parlor D
Division G Paper Session
Chair and Discussant: **Bertram Chiang**
Fairness and motivation
Theresa A. Thorkildsen
A comparison of college-bound females planning to major in mathematics or science-related fields with those of other fields
Gail T. McClure, Michael A. Boatwright
Continuities between motivation research and whole language approaches
Cheryl LaFave, David A. Bergin

S3.6 Teacher and Student Traits
9:00-10:25 am Parlor E
MWERA Paper Session
Chair: **Rose Mary Scott**
A study of preservice and professional teachers' attitudes toward grade retention
Mallouh B. Alkhrisha
District and student characteristics: Correlates with science scores on the Illinois Goal Assessment Program
Grace Gonwa, David Suddick, Leon J. Zalewski
Personal teaching efficacy and the Myers-Briggs types
Mary Ann Flowers

S3.7 Field Experience
9:00-10:25 am Parlor F
Division K Symposium
Chair and Organizer: **Ron Copenhaver**
Post-modern teacher education field experiences: Teaching as problem solving
Ron Copenhaver, Donna Pot, Jerry Ligon, Alice Young, Beth Wilkins

S3.8 Measurement Issues
9:00-10:25 LINCOLN ROOM
Division I Paper Session
Chair: **Isadore Newman**
Differential item functioning: A comparison of item calibration on written and computer adaptive examinations
Gregory E. Stone, John A. Stahl
Career development predicts medical school academic success
Daniel M. Lewis, Bonnie Jones

S3.9 Issues in Learning & Cognition
9:00-10:25 am--MAXIMILIAN ROOM
Division C, H, K Poster Session
A learning task hierarchy analysis of discrimination learning set acquisition in nursery school children
Gerald J. Blumenfield
Relating interest to successful strategy use: A developmental perspective
Mary Moltz, Teena Willoughby, Eileen Wood
Cognitive factors influencing the comprehension of AIDS education materials
Kathryn J. Quick, Thomas Andre
Self-regulated learning in college students: There's more to regulate than learning
Reinhard W. Lindner, Bruce R. Harris
High school seniors' perception of and preferences for intellectual styles
William J. Neumeier
Mentoring and other supportive relationships in the elementary school setting
Deborah L. Bainer, Cheryl K. Didham
Measures that are sensitive to equity issues
Thomas V. Tinkler, J. Wheaton

S3.10 Workshop 9 & Workshop 10. Two 2-hour workshops presented back-to-back
9:00-11:00 am & 11:00-1:00 p.m. Room 501
Cost. $20.00 Preregistration required.
Ways to enhance teacher effectiveness and student motivation
Thomas S. Parish, Kansas State University
James J. McCluskey, University of Oklahoma

S4.1 Knowledge and Measurement
10:30-11:55 am--MEDILL ROOM
Division K Paper Session
Chair: **Don Williams**
Preservice teachers in the field: Accessing and applying professional knowledge
Susan M. Brookhart, Rick R. McCown
Training and management perceptions of public school testing directors: Implications for teacher educators
Ronald N. Marso, Fred L. Pigge
What should teachers know? A content analysis of educational psychology textbooks
Jeffrey W. Peck

S4.2 Policy and Evaluation in Higher Education
10:30-11:55 am Parlor A
Division J Paper Session
Chair: **Martha Wilson**
Financial exigency and program discontinuance: The legal implications for higher education via analysis of cases
Eleanor A. Jones, Edward R. Hines
Correlating students' evaluations of course and instructor with their quiz performance
Ralph F. Darr
The descriptive tests of mathematics skills: Additional evidence of predictive validity
Peggy G. Woodard, David E. Suddick, John H. Meyer

S4.3 Collaboration
10:30-11:55 am Parlor B
Division K Alternative Format Session
Chair: **Ruth Ravid**
A conversation and collaboration: Voices of school-based and university-based research partners
Marianne Handler, Stephen Bloom, Cathy Cosgrove, Peter Fisher, Steven Wolk, Jeanne Chaney

S4.4 Learning Strategies
10:30-11:55 am--MAXIMILIAN ROOM
Division C Poster Session
Learning strategies of preservice teachers: Needs, assessments, and interventions
Kay M. Alderman, R. C. McClendon, L. Wilkinson
Retention of relational and factual information from different representations
Richard K. Staley, Nelson F. DuBois
Information sources used by students in making self estimations of learning
Peter J. Brady
School type, size and location: Correlation with achievement
Michael A. Boatwright, Randy McClanahan
Outline vs. matrix representations: Pictorial & Mnemonic enhancements
Tom G. Meyers, Kenneth A. Kiewra, Sung-Il Kim, Joel Levin
Strategies for teaching strategies for representing text
Jean W. Pierce, Jay Adler

S4.5 Cultural Connections
10:30-11:55 am Parlor D
Division G Paper Session
Chair: **Joan Timm**
The value of literature in multicultural learning
Shirley S. Wilbert
Exploring diversity issues in teaching through case studies
Mary R. Sudzina
Some cultural differences in students' academic motivation orientations between American and Chinese students
Jupian J. Leung
Cognitive style and culture: An analysis of Chinese students' field dependence/independence among three age groups
Lilly Liao, Bert Chiang

S4.6 African American Teacher Administration
Division K Alternative Format Session
Chair: **Carol P. Felder**
Meeting the needs of African American students at predominantly white institutions
Carol P. Felder, Joyce Killian

S4.7 Educational Psychology
10:30-12:00 p.m. Parlor E
MWERA Symposium
Chair and Discussant: **Orpha Duell**
Teaching educational psychology to preservice teachers
Edward Wood, Rick McCown, Gregory J. Marchant, Marlo Schommer

S4.8 Art as Research
10:30-11:55 am--LINCOLN ROOM
Division F Alternative Format Session
Chair: **Deborah L. Smith-Shank**
Art education as questing: A ritual performance
Deborah L. Smith-Shank

S4.9 Multiculturalism
10:30-11:55 am Parlor C
Chair: **Joseph Larkin**
Clarifying language in the exploration of multiculturalism/globalism dialogue
A. Al Rubaiy
Constructing the meaning of behavior in diverse classrooms
Clara A. New
Multicultural education coursework as antiracist curriculum
Christine E. Slater
Literacy education from a multicultural perspective
Rose Mary Scott
Mathematics and multiculturalism
Mian Yusuf

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Balner, Deborah L-
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Balner, Deborah L-
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Corkill, Alice -
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Baker, Elaine F5.5
Bears, Paul R7.8
Bloom, Stephen S4.3
Brookhart, Susan F6.6
Chiang, Bert S4.5
Danielson, Lara F6.1
Dowd, Sue F5.5
Franks, Todd F5.3
Glenn, Eddie F2.6
Han, Tianqi R8.5
Hines, Edward S3.2
Huang, C. Tina R8.5
Jacobs, Lucy R7.4
Keller, Robert R6.3
Killian, Joyce S4.6
Lasley, Thomas R6.7
Lipka, Richard F7.1
Loadman, William F5.1
McCown, Rick S4.1
Morgan, Ronald R4.5
Mueller, Daniel R6.8
Newman, Isadore R7.6
Parish, Thomas R4.7
Plaka, Barbara F6.4
Rogers, Bruce S3.1
Shearer, Robert F5.7
Stahl, John S3.8
Suddick, David S4.2
Willoughby, Teena S3.9
Alme, Charles F2.2
Bandaloe, Deborah R8.5
Bergin, David S3.4
Boatwright, Michael S3.4
Butt, K S2.3
Cooley, Van R4.7
Dilham, Cheryl F7.1
DuBois, Nelson S4.4
Galvez, Maria R7.11
Glenn, Eddie R6.5
Han, Tianqi S3.3
Hines, Edward S4.2
Hurst, David R6.1
Jinks, Jerry R7.1
Kelly, D. Lynn R7.7
Koskela, Ruth F2.1
Lawver, Dale S3.1
Loadman, William F5.1
Lyman, Lawrence F7.1
McMurray, Paula R4.7
Morgan, Ronald R7.10
Navarro, Nora F2.3
Newman, Isadore R8.2
Peck, Jeff R7.11
Plaka, Barbara R4.4
Rogers, Lawrence F5.2
Smith, Cynthia F7.6
Steinley, Gary F6.3
Sultan, Adel R7.1
Wright, Benjamin R4.8
Andru, Thomas S3.9
Barcikowski, Robert R7.7
Bernardt, Kim S3.4
Bradley, Carrie F6.3
Carroll, James F6.2
Copenhaver, Ron F5.4
Dilham, Cheryl S3.9
Fager, Jennifer R8.7
Guy, Geneva F2.8
Gulley, Beverly R8.6
Harris, Bruce S3.9
Hoffman, Steven F7.1
Impara, James F6.4
Jones, Bonnie S3.8
Khanna, Rita R7.7
Kromrey, Jeffrey R7.7
Lomax, Elmer S3.4
Loadman, William F5.3
McClanahan, Randy S4.4
Metcalf, Kim F7.3
Morgan, Ronald R7.2
Necessary, James F6.8
Parish, Robert F6.8
Petrin, Ron R6.4
Post, Donna F5.4
Scheurger, James F7.7
Smyser, Sheryl F6.1
Suddick, David R7.4
Voelker, Alan S2.3
Zalewski, Leon R6.6
Austin, Anna R4.9
Barnard, Bret S3.1
Binns, Audra S3.4
Branch, A S2.3
Chen, Hung R8.5
Correa, Vivian R4.5
Dowd, Sue F5.5
Fager, Jennifer S3.1
Giroux, Dorothy F2.3
Hale, Delora R6.9
Hecht, Jeffrey F5.3
Holmes, Glen R7.1
Impara, James S3.3
Kayler, Mary F6.1
Klewra, Kenneth S4.4
Lampe, Scherie F5.2
Loos, Marjorie F6.5
Loadman, William R4.4
McClendon, R S4.4
Miller, Larry R7.4
Mueller, Daniel R4.4
Newman, Isadore F6.4
Parish, Thomas R4.7
Pigge, Fred S4.1
Post, Donna S3.7
Schraw, Gregory R7.1
Sparks, Rozanne F2.4
Suddick, David S3.6
Wang, Yu-Chung S3.3
Zara, Anthony F6.4

BEST COPY AVAILABLE

Second Coauthor Index

Bailey, M S2.3
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Belt, Jane F5.5
Belt, Jane F5.5
Bergstrom, Betty R4.8
Berkaltz, Liz F6.3
Beverly, Cheryl R4.5
Bradley, Larry R7.6
Cosgrove, Cathy S4.3
Fuqua, Dale R6.4
Furtwengler, Willis F6.2
Granoff, Susan F6.6
Green, Nancy R4.9
Haberman, Martin F2.8
Hartigan, Carol F6.4
Korsun, Nikki R6.9
Kim, Sung-Il S4.4
King, Betty R6.5
Ligon, Jerry S3.7
Lipka, Richard F2.4
Logan-Woods, Josephine R7.1
Markman, Barry R7.7
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Matthias, Margaret R8.6
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Meyer, John S4.2
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Tramill, James F5.5
Tramill, James F5.5
Tramill, James F5.5
Wan, Yiping F2.2
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Bakken, Linda F5.5
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MID-WESTERN EDUCATIONAL RESEARCHER

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AU 2 1820

This MWER issue bears the signature of a new group of editors...yes, our Board of Directors thought fit to appoint the three of us to replace the two of them that brought *MWER* to the status that it currently enjoys. As we take over this honored responsibility from Greg Marchant and Isadore Newman, we want to acknowledge their vision and dedication.

Our challenge now is to maintain their fine traditions. We promise that we will:

- Maintain professional quality by using good judgment and seeking appropriate blind reviews of all manuscripts.
- Strive to educate and develop our Journal contributors toward quality writing and research.
- Work to produce *MWER* issues that we can all be proud of.

We need your manuscripts and your advice. We know that there is room for improvement. We would like *MWER* to achieve the status of another "regional" journal, the *New England Journal of Medicine*. Why not?

— Ayres G. D'Costa
— Susan M. Brookhart
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ON THE COVER

Founded in 1878 by the Congregation of the Holy Ghost, Duquesne University carries on a more-than-century-old tradition of providing a unique liberal and professional education with an emphasis on moral values, a dedication to quality teaching, and a commitment to service. Today, Duquesne University serves more than 8,000 undergraduate and graduate students, offering more than 150 programs on the bachelor's, master's, and doctoral levels in its nine schools: the College and Graduate School of Liberal Arts and Sciences, the A. J. Palumbo School of Business Administration, the John G. Rangos Sr. School of Health Sciences, and the Schools of Education, Law, Music, Nursing and Pharmacy.

Attesting to the excellence of a Duquesne education are the University's listing as one of the "300 Best Buys" in American higher education by Barron's *Education Guide* and its selection as one of the top 10 Catholic universities in the United States by *U.S. News and World Report*.

Situated on a 40-acre hilltop overlooking downtown Pittsburgh, Duquesne's newly renovated campus was cited as the safest urban campus in Pennsylvania and as one of the safest in the country by U.S.A. Today. The cover photo shows Canevin Hall, which houses the School of Education.

Photo by Steven Perdziola

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The *Mid-Western Educational Reseracher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

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Volume 7, No 1 Winter 1994

Is Self-Confidence in Teaching Multidimensional or Unidimensional? An Exploratory Study
Hripsime A. Kalaian, Michigan State University, Donald J. Freeman, Arizona State University, and Richard T. Houang, Michigan State University
2

Parenting Style and Parental Involvement: Relations with Adolescent Achievement
Sharon E. Paulson, Ball State University
6

Educational Psychology: Future Directions An Interview with Anita Woolfolk
Mary Sudzina, The University of Dayton, and Isadore Newman, The University of Akron
12

A Message from President Richard Pugh
15

Convention pictures
16

Call For Proposals for 1994 Annual Meeting
17

Research Alive: Educational Research Can Inform Educational Practice
Jack Snowman, Southern Illinois University at Carbondale
25

Convention Address: Trends in Research on Teaching
Jere Brophy, Michigan State University
29

A Special Tribute to MWERA's first President Edward M. Griffin
40

Voices in Education
Gregory J. Marchant, Ball State University
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Is Self-Confidence in Teaching Multidimensional or Unidimensional? An Exploratory Study

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Abstract

This study examined the factor structure of a 12-item Self-Confidence in Teaching Scale. Two samples of teacher candidates participated: 1,176 students (80% females) entering a teacher preparation program and 861 candidates (77% females) completing their final semester in the program. Even though the scale was deliberately designed to assess candidates' self-confidence in executing 12 distinct teaching roles (as confirmed by a panel of judges), principal axis factor analyses yielded only one factor with an eigenvalue greater than 1.0. Also, similar patterns of factor loadings were found across all subsample contrasts that were considered (e.g., females vs. males; entry- vs. exit-level candidates). These results suggest that the measure of self-confidence in teaching considered in this investigation is a unidimensional rather than a multidimensional scale.

Teacher educators generally assume that self-confidence is a necessary condition for success in teaching (see, for example, Maeroff, 1989; Cecil, 1991). This implicit assumption is bolstered by a growing body of research which indicates that improvements in self-confidence promote positive changes in attributes related to teaching performance. One line of inquiry suggests that teachers who have relatively high levels of self-confidence are likely to think about teaching in more positive ways than those who lack self-confidence (see, for example, Pigge & Marso, 1987; Kalaian & Freeman, 1989; Solliday & Jacko, 1986). Other studies suggest that teachers may devalue even the most critical tasks in teaching if they lack confidence in their abilities to successfully execute those tasks. For example, Solliday and Jacko (1986) have shown that candidates' ratings of the importance of various teaching tasks are directly related to their self-confidence in performing each task.

Even though teacher educators agree that self-confidence is a critical attribute in teaching and a growing body of research has supported this assumption, none of this work to date has centered on the development of adequately defined measures of self-confidence in teaching. This investigation attempted to address this need. Its basic purposes were: (a) to explore the factor structure of the items in a Self-Confidence in Teaching Scale developed at Michigan State University (MSU), and (b) to examine the extent to which the self-confidence factor structure differs for males and females or among teacher candidates at different points in their professional development.

Michigan State University Self-Confidence in Teaching Scale

The 12-item Self-Confidence in Teaching Scale was designed by teacher education faculty at MSU and has been used in several other research studies (e.g., Kalaian & Freeman, 1989). Each item asks candidates to describe the level of confidence they have in their ability to perform one of twelve different teaching roles (e.g., assessing student learning and development). Responses to each item are recorded on a four-point scale ranging from "little or no confidence" to "complete confidence." Each item was deliberately designed by the faculty panel to depict a distinct aspect of teaching. The set of 12 roles was also selected to provide a representative sample of the full range of major teaching responsibilities (Table 1 lists each of the 12 items in the scale).

Related Research

Although studies of the factor structure of measures of constructs that may be directly related to self-confidence have been reported in the literature, the authors are not aware of any comparable studies of scales that assess self-confidence in teaching. Researchers examining the factor structure of self-esteem or self-concept scales have nearly always concluded that these constructs are multidimensional (see, for example, Byrne & Shavelson, 1987; Marsh, Smith & Barnes, 1985; Marsh, Smith, Barnes & Butler, 1983; Marsh & Shavelson, 1985). Only on rare occasions have researchers concluded that self-concept is a unidimensional construct and should not be broken into distinct subparts or facets (e.g., Marx & Winne, 1978). Drawing on this literature, the authors speculated that the factor structure of responses to the MSU Self-Confidence in Teaching Scale would be multidimensional, particularly since the MSU scale was deliberately designed to focus on 12 distinct aspects of teaching.

Gender and Developmental Differences

Interest in potential differences between the factor structures of the self-confidence scale for male and female respondents stems from the growing body of research literature that consistently indicates that males and females express different levels of self-confidence in their abilities as teachers. Kalaian and Freeman (1989), for example, provided evidence that female teacher candidates enter teacher preparation programs with lower levels of confidence than males and that this differential persists to program completion. In a similar vein, Pigge and Marso (1987),

reported that the student teaching experience reduces anxieties about one's role as a teacher to a greater extent for females than for males.

Studies examining gender differences in the factor structures of measures of self-esteem and self-concept have yielded inconsistent findings (see, for example, Byrne & Shavelson, 1987; March, Smith & Barnes 1985; Lerner & Brackney, 1981; Norem-Hibeisen, 1976; Skaalvik, 1986). Byrne and Shavelson (1987), for example, concluded that the factor structures and subscale reliabilities of measures of self-concepts differed as a function of gender. In contrast, Marsh, Smith and Barnes (1985) found that the factor structures of self-concept measures were invariant for males and females. Given these inconsistencies and the lack of a direct parallel between measures of self-concept and measures of self-confidence in teaching, the authors wanted to determine if the factor structure and patterns of factor loadings across individual items of the MSU Self-Confidence in Teaching Scale would be similar or different for male and female teacher candidates.

Finally, the authors also wanted to determine if the factor structure and patterns of factor loadings would vary among experienced and inexperienced teacher candidates (i.e., among those just entering an undergraduate teacher preparation program and those who are completing the program). Although there was no research literature to draw upon, we conjectured that these two factor structures would probably vary since those completing the teacher education program have considerably more experience in executing each teaching role than is true for those who are just entering the program.

Methodology

Samples

The two groups of teacher candidates who participated in this study will be referred to as the entry and exit samples:

1. The "entry sample" included 1,176 undergraduate teacher candidates (80% females; less than 4% minorities). Members of this sample completed the MSU Self-Confidence in Teaching Scale during the first week of the first required education course. Most members of this sample (66%) were college juniors.

2. The "exit sample" included 861 preservice candidates (77% females) who completed the MSU Self-Confidence Scale during the final weeks of student teaching, the final education requirement for most students. Most members of this sample (81%) were college seniors.

Analyses

The SPSS/PC version of principal axis factoring method (PA2) was used to examine the factor structure of the self-confidence scale. In this factoring method, squared multiple correlation coefficients between a given item and the rest of the items in the MSU self-confidence scale were entered as initial communality estimates. Then, factors were extracted through an iterative procedure utilizing a convergence criterion of .001. Factors with a minimum eigenvalue of 1.0 were retained.

The series of factor analyses that were ultimately conducted began with an analysis of responses to the self-confidence scale for all members of the entry sample (males and females combined). The analysis was then repeated for the exit sample. Then, the data for males and females in each sample were independently analyzed.

Results

Internal Consistencies

The inter-item correlations among the 12 items in the self-confidence scale were consistently high, ranging from 0.34 to 0.70 for the entry sample and from 0.29 to 0.62 for the exit sample. The corresponding coefficient alphas were 0.92 for both the entry and exit data. Coefficient alphas were also computed separately for males and females in each of the samples. Once again, high levels of internal consistency were found. For the entry sample, the alphas for males and females were 0.91 and 0.93 respectively. The coefficient alphas were 0.92 for both males and females in the exit sample.

Factor Analyses of Responses to the Self-Confidence Scale

The results of principal axis factor analysis of the MSU Self-Confidence in Teaching Scale are presented in Table 1 for both the entry and exit samples. As these results indicate, both sets of data yielded only one factor with an eigenvalue of greater than 1.0. This general factor accounted for 57.5% of the

Table1

Factor Loadings for Factor I (Overall Level of Confidence in Oneself as a Teacher): Entry vs. Exit Samples[1]

Item	Entry Sample	Exit Sample
1. Making instructional decisions in a sound and defensible manner.	.82	.73
2. Maximizing student understanding of the subject matter.	.81	.75
3. Providing instruction that addresses individual needs and achievements.	.80	.74
4. Assessing student learning and development.	.76	.70
5. Motivating students to participate in academic tasks.	.76	.73
6. Establishing a classroom environment in which students actively take responsibilty for themselves and for others in the group.	.74	.74
7. Designing lessons, units, and courses of study.	.73	.71
8. Applying effective methods of teaching specific subjects such as reading and mathematics.	.71	.76
9. Deciding what content to teach and what not to teach.	.69	.58

(continued on page 4)

(Table 1 continued)

Item	Entry Sample	Exit Sample
10. Analyzing and improving your own teaching performance	.69	.62
11. Establishing effective working relationships with students from diverse cultural and academic backgrounds (e.g., students whose ethnic backgrounds are different from your own; gifted students; students with learning problems)	.63	.57
12. Responding appropriately to disruptive student behaviors	.62	.69

[1] Each item in this table is presented as it appears in the MSU Self-Confidence in Teaching Scale. However, items in Table 1 are listed in descending order of factor loadings and not in the order in which they appear in the Scale.

total entry data variance (eigenvalue = 6.7) and 52.7% of the total exit data variance (eigenvalue = 6.5).

As might be expected, the loadings for Factor 1 were fairly uniform across all 12 items in the entry and exit samples. For the entry sample, factor loadings ranged for 0.62 to 0.82. The corresponding figures for the exit sample ranged from 0.57 to 0.76.

Gender Differences

Entry Sample. For the entry sample, the principal axis factor analysis for male respondents yielded only one factor with an eigenvalue greater than 1.0. This factor had an eigenvalue of 6.12 and accounted for 51.0% of the total variance. Similarly, only one factor was extracted from the data provided by entry-level female candidates. This factor accounted for 58.5% of the total variance and had an eigenvalue of 7.1. As shown in Table 2, the factor loadings on the first factor ranged from 0.61 to 0.83 for females in the entry sample; and from 0.52 to 0.82 for males. The pattern of loadings across items was also similar for males and females.

Table 2

Factor Loadings for the Factor 1: Male-Female Contrasts

Item	Entry Sample Male	Entry Sample Female	Exit Sample Male	Exit Sample Female
1. Making sound instructional decisions	.82	.81	.71	.77
2. Maximizing student understanding	.74	.83	.77	.72
3. Individual instruction	.75	.82	.74	.76
4. Assessing student learning and development	.73	.77	.70	.70
5. Motivating students	.72	.76	.72	.77
6. Promoting student responsibility	.67	.74	.73	.76
7. Designing lessons, units and courses of study	.73	.73	.70	.73
8. Applying effective methods of teaching specific subjects	.60	.73	.77	.74
9. Deciding what to teach	.61	.71	.58	.57
10. Analyzing own teaching performance	.67	.69	.61	.68
11. Establishing relations with students from diverse backgrounds	.52	.65	.57	.59
12. Responding to disruptive student behaviors	.58	.61	.68	.67

(continued)

Exit Sample. The results of principal axis factor analyses for males and females in the exit sample were similar to those reported for the entry sample. Analyses of data provided by male respondents yielded only one factor that had an eigenvalue greater than 1.0. This factor had an eigenvalue of 6.4 and accounted for 52.1% of the variance. Likewise, exit data provided by females yielded only one interpretable factor which accounted for 54.2% of the total variance and had an eigenvalue of 6.5. As shown in Table 2, factor loadings on Factor 1 ranged from 0.57 to 0.77 for both males an females in the exit sample.

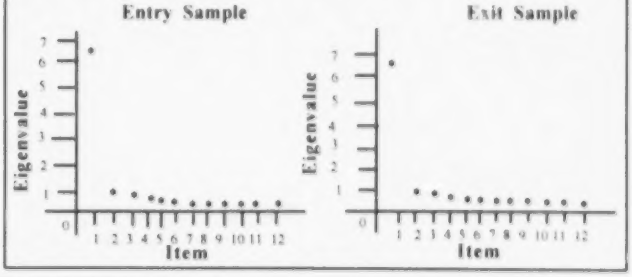
Discussion

A Closer Look at the Unidimensionality of the MSU Scale

Cooper (1983) has shown that the use of the "eigenvalue-less-than-1.0" decision rule to determine the number of intelligible factors in a given factor matrix may mask factors that would be identified if the matrix were rotated. As a further test of the unidimensionality of the factor structure of the MSU Self-Confidence in Teaching Scale, the authors therefore conducted a scree test to determine if the only significant drop in eigenvalues occurred between the first and second factors and if all subsequent decreases in these values gradually trailed off across additional factors. The results of the scree analyses for the entry and exit samples are shown in Figure 1.

Figure 1

Scree Plots of the Eigenvalues for the Entry and Exit Samples



As this figure illustrates, eigenvalues for the entrysample dropped from 6.7 to .97 from Factor 1 to Factor 2, then .65, .61, .56, .55, .47, .40, .38, .34, .32, and .29 across Factors 3 through 12. The corresponding eigenvalues for the exit sample were 6.5, .79, .68, .63, .56, .53, .47, .45, .42, .38, .36, and .33 for Factors 1 through 12. Although not shown in Figure 1, similar patterns of eigenvalues occurred for each of the other four subsamples that were considered in the study (e.g., male students at exit). These consistent patterns across all analyses suggest that Factors 2 through 12 are largely measuring random error. It is therefore reasonable to conclude that there is only one meaningful and interpretable factor within the factor structure of the MSU Scale.

Conclusion

The results of this exploratory study suggest that measures of self-confidence in teaching are likely to be unidimensional, rather then multidimensional scales. Likewise, it is reasonable to hypothesize that this unidimensionality will hold for both males and females and for those who are completing teacher preparation programs as well as for those who are just beginning their studies in education. However, given that this study considered only one self-confidence measure and only one institutional context, there is a clear need to determine the generalizability of these findings across alternative measures of self-confidence (e.g., scales that include additional items) and other institutional contexts. Further research focusing on alternative measures of teachers' self-confidence may yield different factor structures and different inferences about the self-confidence in teaching construct.

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Parenting Style and Parental Involvement: Relations with Adolescent Achievement

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Abstract

The purposes of this study were to explore the influence of parenting style (demandingness and responsiveness) and parental involvement (commitment to achievement) on school achievement in adolescents, and to compare the relative importance of the different dimensions of parenting for the achievement outcome. Subjects were 80 ninth-grade boys and girls from a suburban community in the southeast. Questionnaire measures of adolescents' perceptions of maternal and paternal demandingness, responsiveness, and commitment to achievement were designed for this program of research. Boys' reports of both maternal and paternal parenting significantly predicted their achievement outcome, with parental values towards achievement significantly predicting achievement in boys above and beyond dimensions of parenting style. Girls' reports of parenting did not predict their achievement outcome.

In the research on family influences on achievement, a number of parenting characteristics have been found to be related positively to children's school achievement, including parental involvement (see Christenson, Rounds, & Gorney, 1992, and Hess & Holloway, 1984, for reviews) and authoritative parenting styles (Baumrind, 1967, 1971; Dornbusch, Ritter, Leiderman, Roberts, & Fraleigh, 1987; Steinberg, Elmen, & Mounts, 1989). Traditionally, the influences of parental involvement and parenting styles have been studied within different disciplines, with parental involvement being the primary focus in the field of education, and parenting styles being the primary focus in the field of developmental psychology. But, even when developmentalists or educators study both parental involvement and parenting styles, they generally do so in separate lines of research. Additionally, the majority of this research has focused on elementary school children.

The major purpose of this study was to explore the influence of both parenting style and parental commitment to achievement on the achievement outcome of adolescents. In light of previous research (Baumrind, 1967, 1971; Dornbusch *et al.*, 1987; Steinberg *et al.*, 1992), it was expected that adolescents of parents who were high on both demandingness and responsiveness would have higher levels of achievement than adolescents from other parenting styles. Similarly, it was predicted that a high parental involvement in achievement would be positively related to the achievement outcome of the adolescents (Hess & Holloway, 1984; Steinberg *et al.*, 1992; Stevenson & Baker, 1987). Although it was expected that parental involvement in achievement would be positively related to demandingness and responsiveness, it was expected that high levels of parental involvement in achievement would predict achievement above and beyond that predicted by parenting style. Such an outcome would support educators' views that parental involvement in children's achievement is the most important component of parenting. Developmentalists have argued that parenting style is more important than parental involvement for adolescents' school achievement (Steinberg *et al.*, 1992), but no studies have made a direct comparison of the relative importance of the different dimensions of parenting.

Parental Involvement

In major reviews of the research on family influences on achievement, Hess and Holloway (1984) and Christenson and colleagues (1992) discussed characteristics of parental involvement which were found to have the most consistent relations with achievement. In general, high expectations of parents for their children's achievement (Gottfried & Gottfried, 1989; Marjoribanks, 1988; Parsons, Adler, & Kaczala, 1982; Seginer, 1983, 1986; Thompson, Alexander, & Entwisle, 1988), positive parental beliefs and attributions about their children's abilities (Holloway & Hess, 1982; Sigel, 1982; Stevenson, Lee, Chen, Lummis, Stigler, Fan, & Ge, 1990) and positive home learning environments, including helping with homework and monitoring grades (Epstein, 1987; Steinberg, Lamborn, Dornbusch, & Darling, 1992; Stevenson & Baker, 1987) were found to be related positively to achievement. Additionally, parental involvement at school (involvement in school activities, sports events, or other school-related functions) was found to have a positive influence on children's school achievement (Linney & Vernberg, 1983; Stevenson & Baker, 1987).

These different dimensions of parental involvement (i.e. parental expectations, parental encouragement, helping with homework, and involvement in school activities) usually are studied in separate lines of research. When they are studied together, they frequently are combined into single measures of parental involvement. For example, although Steinberg and others (1992) studied the influences of parental encouragement and parental involvement as separate dimensions, their measure of parental involvement included both help with homework and involvement in school activities. This study considered three elements of parental involvement separately: (1) *values towards achievement*, (2) *interest in grades and schoolwork*, and (3) *involvement in school functions*. Additionally, adolescents' perceptions of both maternal and paternal commitment to achievement were obtained so as not to ignore fathers' roles.

Parenting Style

Affective relationships between parents and children and discipline and control strategies (Baumrind, 1971; Crouter, MacDermid, McHale, Perry-Jenkins, 1990; Dornbusch *et al.*, 1987; Grolnick & Ryan, 1989; Hess & McDevitt, 1984; Steinberg *et al.*, 1992) have been found to be related to achievement as well. These two parenting characteristics (level of affect and level of control) have been used to represent two dimensions of parenting called responsiveness and demandingness, respectively (Maccoby & Martin, 1983). These are the same dimensions originally identified by Schaefer (1965) as warmth and control. The interplay between responsiveness and demandingness is evident in Baumrind's typology of parenting styles (Baumrind, 1971). Baumrind (1967, 1971) found that children of authoritative parents (those with high levels of both demandingness and responsiveness) have higher achievement than children of either authoritarian (high levels of demandingness, but low levels of responsiveness) or permissive (low levels of demandingness) parents, suggesting that high levels of both control and affect were more conducive to positive achievement outcome than were other parenting characteristics.

In a more recent study of the relations between parenting style and achievement in high school students, Dornbusch and colleagues (1987) similarly found a positive relationship between authoritative parenting and adolescents' grades, and a negative relationship between grades and both authoritarian and permissive parenting styles. Their measures, however, integrated parental involvement within parenting style. For example, items on the permissiveness scale suggested that "parents are not involved in education, they do not attend school programs for parents, they do not help with homework, and they do not check the child's homework" (Dornbusch *et al.*, 1987, p. 1247). Although, it was reasonable to assume that parenting style was correlated with parental involvement (i.e. authoritative parents display higher levels of commitment to achievement than do parents with other parenting styles), it may be necessary to measure the two constructs separately and consider the relative importance of each in determining achievement outcome.

A measure of parenting style was created for the current study using the two continuous dimensions of *demandingness* and *responsiveness*. Adolescents' perceptions of both maternal and paternal demandingness and responsiveness were obtained. The measures were modeled after a number of measures which have assessed similar dimensions of parenting, including the Children's Report of Parental Behavior Inventory (Schaefer, 1965), the Family Environment Scale (Moos & Moos, 1981) and the Parental Attitudes Questionnaire (Spence & Helmreich, 1978), as well as measures of parenting used by John Hill and colleagues in their line of research on adolescent family relations (e.g. Hill, Holmbeck, Marlow, Green, & Lynch, 1985a,b; Paulson, Hill, & Holmbeck, 1991).

The developmental literature on adolescents suggests that the influences of parenting style may be different for boys and girls because of the increased need for autonomy in early adolescence. Studies have found negative outcomes in boys, but not in girls, resulting from too much independence (too little demandingness) too soon (Crouter et al., 1990; Grolnick & Ryan, 1989). Therefore, separate analyses were done for boys and for girls in the current study.

Method

Subjects

Subjects for this study were 80 ninth grade boys and girls (n = 34 boys and 46 girls), recruited from public high schools in a suburban county in the southeast. All ninth graders from two county high schools, chosen to assure a wide range of socioeconomic status, were asked to participate. The only criterion for selection was that the students lived with two parents (who may or may not be natural parents), because the influences of both mothers' and fathers' parenting were of interest. Additionally, the primary goal of this study was to explore the influence of current parenting (regardless of the biological relation of the parents to the adolescents) on current school achievement.

The mean age of the adolescents was 14.90 (19 of the adolescents were 14 years old, 50 were 15, and 11 were 16). Eighty-five percent of the families were White, 9% were African-American, 5% were Asian-American, and 1% was Hispanic-American. Fifty percent of the families were middle to upper-middle class and 50% were working class (classified as lower-middle class by other measures) as assessed by the four-factor Hollingshead index (1975). The wide range of SES in the sample was representative of the population in the county.

Procedure

Questionnaire packets were mailed to the homes of approximately 150 ninth-graders who had responded positively to an earlier letter requesting their participation. About 50% of the adolescents completed and returned the questionnaires creating the final sample of 80 subjects.

Measures

Achievement Outcome. Adolescents' self-reported grades from the most recent grading period were used to measure achievement. An average grade was calculated from the grades reported on five core courses using a 4-point grading scale (A=4.0, B=3.0, etc). Self-reported grades as a measure of achievement were endorsed by Dornbusch and others (1987) because such grades were found to correlate highly with school records ($r > .70$) and they reflect current achievement rather than level of intellectual potential (which was not of interest in this study).

Parenting Measures. A 15-item scale was designed to assess maternal and paternal demandingness. Items were written to assess the general level of parental control in the family and included questions about rules and discipline strategies. Sample items include "My mother (father) disciplines me a lot" and "My mother (father) gives me chores to do around the house." Another 15-item scale was designed to measure maternal and paternal responsiveness, which assessed parental warmth and whether parents allowed their adolescents to have a say in discipline matters. Sample items include "My mother (father) believes I have a right to my own point of view" and "My mother (father) enourages me to talk to her (him) honestly." A 22-item scale was designed to measure maternal and paternal involvement in achievement. Three subscales were created from this measure in order to assess specific dimensions of parental commitment to achievement: achievement values, interest in

schoolwork, and involvement in school functions. Sample items from the three subscales include "My mother (father) tries to get me to do my best on everything I do," "My mother (father) makes sure that I have done my homework," and "My mother (father) usually goes to activities in which I am involved in school," respectively.

Only adolescents' reports of the parenting measures were used for the purposes of this study, because previous research has shown that adolescents', but not parents', reports of parenting are correlated with their achievement outcome (Paulson, 1993). Adolescents responded to all the items as they described their mother, then again as they described their father, using a 5-point response scale ranging from "Very unlike my mother (father)" to "Very like my mother (father)." Higher scores indicated higher levels of parenting. The order of presentation of the maternal and paternal scales was altered in half of the questionnaires to control for possible response bias. Total scores for each scale were obtained by averaging across scale items. Cronbach alphas for adolescents' reports of maternal and paternal demandingness were .82 and .90, respectively. Cronbach alphas for adolescents' reports of maternal and paternal responsiveness were .87 and .86, and alphas for adolescents' reports of maternal and paternal commitment to achievement were .83 and .74, respectively.

Evidence for the validity of the parenting measures was found. The two parenting factors (demandingness and responsiveness) were confirmed using a principal components factor analyses with Varimax rotation. Two distinct factors emerged with the demandingness items loading on one factor and the responsiveness items loading on the other factor. Factor analysis of the parental involvement scale revealed two factors with items from the achievement values and interest in schoolwork subscales loading on one factor (these subscales are highly correlated) and the items from the school functions subscale loading on the other factor. In additional analyses of the measures, adolescents' reports of demandingness were found to correlate negatively with the Extreme Autonomy scale ($r=-.58$ and $r=-.60$, $p<.01$ for maternal and paternal measures respectively) and positively with the Enforcement of Discipline scale ($r=.60$ and $r=.64$, $p<.01$ for maternal and paternal measures) of the Children's Report of Parental Behavior Inventory (CRPBI; Schaefer, 1965). Adolescents' reports of responsiveness correlated highly ($r=.76$ and .79, $p<.01$ for maternal and paternal measures) with the Acceptance of Individuation subscale of the CRPBI. Demandingness also correlated highly with the Control scale ($r=.54$ and $r=.49$, $p<.01$ for maternal and paternal measures) of the Family Environment Scale (FES; Moos & Moos, 1981), responsiveness correlated with the Expressiveness scale ($r=.43$ and $r=.38$, $p<.01$ for maternal and paternal measures) of the FES, and parental involvement correlated with the Achievement scale ($r=.47$ and $r=.36$ for maternal and paternal measures) of the FES.

Analysis

Pearson correlation coefficients between the parenting measures are shown in Table 1 for both boys' and girls' reports of both maternal and paternal parenting. Correlations among boys' reports are shown above the diagonals and correlations among girls' reports are shown below the diagonals. These correlations were examined for multicollinearity.

Multiple regression analyses were employed to assess the relations between parenting and achievement outcome. Five measures, namely demandingness, responsiveness, and the three subscales of parental involvement, were entered simultaneously to determine the proportion of variance in achievement explained by the combination of parenting variables. Separate analyses were run for boys' and girls' reports of maternal and paternal parenting. The small sample size precluded entering both maternal and paternal parenting variables into the same regression equation.

Table 1

Correlations among Adolescents' Reports of Parental Demandingness, Responsiveness, and Commitment to Achievement

Parenting Measures	D	R	V	I	A
Maternal Parenting					
Demandingness (D)	—	-.18	06	13	01
Responsiveness (R)	-.43**	—	31	44**	01
Values Achievement (V)	11	54**	—	46**	20
Interest in Schoolwork (I)	14	50**	67**	—	20
Attends School Functions (A)	-.05	51**	31*	42**	—
Paternal Parenting					
Demandingness (D)	—	-.51**	41*	11	-.36*
Responsiveness (R)	-.47**	—	18	36*	12
Values Achievement (V)	39**	14	—	65**	-.54**
Interest in Schoolwork (I)	40**	27	41**	—	16
Attends School Functions (A)	-.12	45**	14	20	—

Note. Correlations among boys' perceptions of parenting are shown above the diagonals in each matrix, and correlations among girls' perceptions are shown below the diagonals. *p< .05, **p< .01

Results

The results of the four regression analyses are shown in Table 2. As expected, boys' reports of both mothers' and fathers' parenting significantly predicted their achievement outcome ($R^2=.39$, $p<.01$ and $R^2=.42$, $p<.01$ for mothers and fathers, respectively). Girls' reports of parenting did not predict a significant amount of variance in their achievement.

Squared semi-partial correlations were examined to assess the unique proportion of variance in achievement predicted by each of the parenting dimensions above and beyond all other variables. Whereas the squared multiple correlations, reported earlier, assessed the combined contribution of the parenting variables to the prediction of achievement, the squared semi-partial correlations provided important information about the unique contribution of each factor by controlling for the shared variance in the parenting variables. These results revealed that maternal demandingness ($sr^2=.11$, $p<.05$) and both maternal and paternal values towards achievement ($sr^2=.18$, $p<.01$ and $sr^2=.13$, $p<.05$, respectively) were positively related to achievement outcome, and

Table 2

Summary of Multiple Regression Analyses of the Influence of Parenting Variables on Achievement Outcome

	Maternal Parenting			Paternal Parenting		
Variables Entered	sr	sr^2	R^2	sr	sr^2	R^2
Boys' Reports			.39**			.42**
Demandingness	.33	.11*		.18	.03	
Responsiveness	.26	.07+		-.16	.03	
Values Achievement	.43	.18**		.36	.13*	
Interest in School-work	.31	.10*		-.36	.13*	
Attends School Functions	.10	.01		.27	.07+	
Girls' Reports			.12			.04
Demandingness	.11	.01		.09	.01	
Responsiveness	.05	.00		.01	.00	
Values Achievement	.33	.11*		.15	.03	
Interest in School-work	.16	.03		.07	.00	
Attends School Functions	.05	.00		.01	.00	

Note. +p< .10, *p< .05, **p< .01, R = multiple regression coefficient, sr = semi-partial correlation for each predictor

both maternal and paternal interest in schoolwork (sr^2 = .10 and .13, $p < .05$, respectively) were negatively related to achievement above and beyond the other parenting characteristics. Maternal responsiveness (sr^2 = .07, $p < .10$) and paternal attendance school functions (sr^2 = .07, $p < .10$) had marginal unique relations with achievement in boys.

Discussion

As expected, in families of boys, adolescents' reports of both maternal and paternal demandingness, responsiveness, and commitment to achievement predicted a significant proportion of the variance in achievement (39% and 42% for mothers and fathers, respectively). Although it has been suggested that mothers have more influence than fathers in children's discipline (Hoffman, 1974; Bronfenbrenner & Crouter, 1982; Hess & Holloway, 1984), in this study both mothers' and fathers' parenting practices had important influences on achievement in adolescent boys. This finding provided further evidence for the argument that research must explore both maternal and paternal influences on adolescent achievement outcome.

The results of this study must be interpreted cautiously because of a number of limitations, and the study should be considered a pilot study which can provide a basis for future research in the area. The sample is this study was small and somewhat restricted. Those families who agreed to complete the parenting questionnaires may very well be biased towards those with healthier styles of parenting, producing a restricted range on the parenting variables. Although there was a wide-range of socio-economic status represented in the sample, the small sample size precluded being able to analyze the data separately by SES. It is possible that parenting has different relationships with achievement in different family types. And although the sample was restricted to intact families, both biological and blended families participated. The parenting characteristics of these two family structures may be very different and have different relationships with achievement. Finally, the proportion of variance in achievement explained by parenting was expected to be small (similar to the results reported by Dornbusch et al., 1987); however, the sample size made it difficult to detect small relationships which may in fact exist. Regression results are discussed in a tentative fashion, with as many questions being raised as being answered.

In agreement with similar research (Dornbusch *et al.*, 1987; Crouter *et al.*, 1990), higher levels of parental control were related to higher levels of achievement in boys. Although, it might be expected that lower levels of demandingness would enhance the increased importance of autonomy in early adolescence (Douvan & Adelson, 1966; Kandel & Lesser, 1972; Grotevant & Cooper, 1985), these results, like those of Crouter and her colleagues (1990), suggest that negative outcomes in boys may be the result of too much independence too soon. Contrary to expectations, however, paternal responsiveness was negatively related to achievement in boys, whereas maternal responsiveness was positively related, revealing possible differences in the influences of mothers' and fathers' parenting.

As predicted, high levels of both maternal and paternal commitment to achievement were significantly predictive of achievement outcome in boys. More specifically, above and beyond the influence of parenting style (i.e. regardless of parenting style), boys who perceived their parents as having higher achievement values had higher grades in school than did boys who did not perceive high achievement values in their parents. In contrast to what developmentalists have implied (Steinberg *et al.*, 1992), it appears that parental encouragement for achievement is a more important dimension for adolescents' achievement outcome than parenting style alone. Demandingness and responsiveness are obviously important parenting characteristics and they are likely to be accompanied by high values towards achievement, but parents with less than desirable parenting styles may be effective in helping their children achieve in school by valuing and encouraging achievement. Paternal interest in school functions also contributed uniquely to achievement in boys. It may be very important for boys to see their fathers interested in what they do at school. These findings were consistent with those of earlier work which examined the effects of family on achievement (see Christenson, *et al.*, 1992 and Hess & Holloway, 1984 for reviews; Gottfried & Gottfried, 1989; Linney & Vernberg, 1983).

Contrary to expectation, however, boys who perceived their parents as more interested in their schoolwork had lower grades than did boys who perceived their parents as less interested in schoolwork. In a review of the literature on family influences on achievement, Hess and Holloway (1984) concluded that children whose parents help with their homework and take an interest in their grades and schoolwork have higher achievement outcomes than do children whose parents do not show such an interest. These findings, however, were most

evident in studies with elementary-school-age subjects. By the time students reach high school, parents may not take as active a role in their children's schoolwork unless there is a problem. Therefore ninth graders who do more poorly in school may have parents who more closely monitor their work, hence the negative relation. It is important for educators to understand that parents are more likely to take a reactive approach to helping their children with homework when they reach high school. Parents need to be encouraged to take a more proactive approach to monitoring their adolescents' school performance in order to influence their achievement positively.

No significant relationships were found between parenting and achievement outcome in girls. A number of explanations may be possible. During the transition to adolescence, increased parental control of girls has been found to be evident as girls begin dating and becoming more social (Hill, 1980; Collins, 1990). Girls may react more positively to moderate levels of demandingness than to either very low or very high levels. It may be possible that influences from other developmental contexts (peers and school) become moderating influences to girls' achievement outcomes. During adolescence, girls'achievement motives are more likely than boys' to be influenced by their peers (Bardwick & Douvan, 1971; Dweck & Light, 1980).

It appears that, at least for boys, some aspects of parental involvement in education are related to ninth-graders' achievement in ways beyond what is explainable by parenting style. Girls and boys may experience these effects differently. These issues are central for both developmentalists and educators; therefore, these findings call for replication with a larger and more representative sample. These findings can be generalized only to ninth grade students; therefore, exploration of the developmental changes in the importance of various parenting practices would also be an important addition to this line of work.

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Educational Psychology: Future Directions
An Interview with Anita Woolfolk

Mary R. Sudzina, The University of Dayton, and
Isadore Newman, The University of Akron

1 Why do you think your text is the #1 best-selling educational psychology text? What makes it unique?

There are many answers to your first question, including luck and the help of committed people. I hope my book strikes a balance between clarity and complexity. Educational Psychology is rich with ideas, theories, principles, research results—but just presenting this wealth of information is not enough. Students must understand and value the ideas before they can apply them. I believe a textbook is only one of many resources that students need to understand educational psychology, but a text can provide a frame of support. The text should be clear and encourage students to think beyond the words on the page. Some texts don't stimulate thinking beyond them because students spend all their efforts dealing with the text's complexities. I am surprised when some students say to me that mine is the first psychology book they really understand. It is as if they expect a text to be difficult or confusing. I have taught educational psychology every semester for almost 25 years and I respect the concerns of the students. I also teach a student teaching seminar and other graduate courses, so I see students at different periods of their development. I try to incorporate a realistic understanding of the developing student/reader into my writing and talk directly to students, providing many examples and illustrations. I think the book has done well in part because students and professors find it worthwhile—that is always a challenge for a required course. Professors teaching educational psychology have to make the case for the value of the field and I am told my book helps to make the case. Ideas are tied to action, to applications. In the text, experienced teachers tell how they solve problems with the help of principles from educational psychology. Students who use the book see value in studying these principles.

Anita Woolfolk, author, researcher, and teacher is a member of the Department of Educational Psychology, Graduate School of Education, Rutgers University. She is also Vice-President of Division K, Teaching and Teacher Education, of the American Educational Research Association. Dr. Woolfolk is well known as the author of Educational Psychology, 5th Edition (Allyn & Bacon, 1993) and Research Perspectives on the Graduate Preparation of Teachers (Allyn & Bacon, 1989).

If you could teach only 3 concepts from your text, what would they be and why are they important?

Three concepts, that's tough. One notion I emphasize is the importance of understanding your students' understanding. No matter how you teach, no matter what the goal, no matter who the students are, as a teacher you must keep asking what sense the students are making. One of the most important things a teacher can do is to understand how students think about an idea or subject. Second, I often find myself saying that "students are just like people." By this I mean students don't happily repeat unpleasant events, they prefer work that is real and important, they like to grow more competent, and they need to be a valued member of a group—just like all of us—just like people, because, of course, they are. Third, there is no one best way to teach. Know your students. Understand how they learn. Try a range of approaches. Be persistent and inventive.

2 How does the knowledge of educational psychology make a difference in the preparation of preservice teachers?

Educational psychology asks critical, basic questions about how people learn and how to support learning, particularly in classrooms. Educational psychology studies how people (with all their histories and abilities) learn something in a particular physical and social setting. In earlier times the focus was on the person, but today educational psychologists study the learning of subjects and the settings for learning. These understandings are fundamental for teachers. Teachers must know their students. They must know how their students make sense of specific subjects. They must know how situations—including other people—affect learning.

The authors would like to acknowledge the assistance of Gregory J. Marchant, Ball State University, for formulating the interview questions.

How would this be differentiated at the undergraduate and graduate levels?

That depends on the backgrounds of the students. For example, many of my undergraduate students have had several courses in developmental, cognitive, and clinical psychology. They can handle psychological concepts easily. But they have not taught. I spend time bringing the classroom experience to them with video, cases, examples, samples of kids' work, and field assignments. I have them read selected research and sometimes require them to conduct small-scale studies. At the Master's level, many of my students have taught, but their background in psychology is limited. They read several texts and many studies. I help them build an understanding of psychological principles by analyzing their own and each others' teaching.

3 If you had total control of the curriculum to prepare preservice teachers, how would you redesign the curriculum to maximize the effectiveness of teacher preparation?

I doubt that there is one best way to prepare teachers. But any worthwhile program must solve several problems. First, prospective teachers must have a context for learning. Too often we expect the students to build knowledge for answering questions that they are not yet asking. Whether through well planned and supervised field experiences, discussion of cases, assignments in teaching laboratories, or inventive uses of technology, prospective teachers must be surrounded with real educational problems that can be identified, analyzed, and solved by applying their growing understanding of the psychology, sociology, methodology, history, and philosophy of teaching. Second, we have to solve the problem of a disconnected curriculum. Preparing teachers is everyone's responsibility and sensible designs require cooperation among faculty, school systems, and students. Everyone who teaches or supervises in a teacher preparation program should know what is happing in all the other courses and experiences. The administrative structure should make it simple for faculty and local school people to work together and to try new approaches. I just spent the last two days with a small group of elementary and secondary teachers from around the country advising the Educational Testing Service about how to use cases to develop a licensing examination for the "principles of learning and teaching"component of the new Praxis II series. I wish my students had been in the room to hear the sensitive analyses of the cases we considered. I wish my students could have heard these gifted teachers talk about their thinking. There should be ways for the beginning teacher education student to join in those kinds of discussions. Third, the preparation of teachers should be seen as ongoing development, not as the completion of requirements. Any teacher preparation program must support and encourage increasing autonomy. Becoming a teacher should be seen as a continuing process, not something that magically occurs after all courses are completed. This means prospective teachers need to assume more and more responsibility for real teaching over the course of their preparation as they gain knowledge and skill.

What is the role of research in teacher preparation?

Research is process and product. Students should learn about the findings of relevant studies because teaching is not simple. "Holding students back" has effects; ability grouping has effects; different approaches to teaching reading support different kinds of learning; certain signs suggest that a student might have learning, vision, hearing, or emotional problems; stanine scores and percentiles tell us some things and not others about students' performances; there are alternatives to traditional testing and grading; there are advantages and dangers in small group learning; some explanations clarify and others confuse; certain ways of interacting with students support and others undermine motivation; the list goes on. As a profession, teaching has a vocabulary and base of specialized knowledge. Prospective teachers should own knowledge, just as they must know that knowledge is constantly evolving. Research is also process. Teachers must be researchers as they strive to understand their students and the effects of teaching. Teachers are ethnographers as they enter the world of their students and study life in their classrooms. They are experimenters as they try a different approach to the unit on fractions and carefully note the results in terms of the students' learning, not just the "feel"of the lesson. Research gives teachers new ways to think and new ideas to think about. Research should also produce a healthy skepticism as teachers consider alternative explanations for why things happened as they did.

4 What is your personal area of research interest? What are its implications for educational psychology and teacher education?

My early work centered on nonverbal communication in classrooms. I was particularly interested in ways that teachers communicate attitudes and expectations to students and the nonverbal cues that teachers use to form expectations. More recently, I have studied teachers' beliefs about classroom management and about their own sense of efficacy. I have looked at how feelings of efficacy relate to ideas about motivating and managing students and how all these beliefs change with initial teaching experience. With a colleague at Rutgers, Carol Weinstein, I have used multiple approaches including concept maps, surveys, analysis of videotapes, and the development of metaphors for management, to study how the experience of student teaching changes beliefs about classroom management's role in good teaching. With another colleague, Wayne Hoy, I have studied how the climate of the school is related to the experienced teacher's sense of efficacy.

My work on student teachers' evolving beliefs about management suggests that teacher preparation programs need to acknowledge prospective teachers' struggle to develop personal theories about management. We do not listen to our students enough but rather give them solutions for problems they are not experiencing. Many of my students in elementary certification programs, for example, feel conflict about the desire to be caring and the need to control. Jim McLaughlin identified this tension in his research on beginning teachers and I see it in my students as well. This important issue is never directly addressed in most teacher preparation programs, so much of what we do"cover" on classroom management seems irrelevant or off target.

My work on school climate and teacher efficacy is at a very early stage, but it suggests that some cooperation among teacher and administrator preparation programs might be useful. Certain kinds of support from administrators encourage teachers' sense of efficacy. The support that matters is not "cheerleading" or close supervision but help in doing the work of teaching—help in achieving the teachers' goals of reaching the students.

5 Should there be theories derived from a feminist perspective in educational psychology as have been applied in the areas of counseling theory and research?

Yes. When anthropologists turned their attention to classrooms, we learned about the culture of the class and how participation is more complicated than just raising your hand. When sociolinguists studied small groups, we had insights about questions, explanations, and learning. Different tools allow the creation of different understanding. It is important to keep asking new questions and to ask old questions in new ways.

6 If you had to name the top three issues that educational psychologists will have to face in the future, what issues do you think they will be?

Educational psychologists must be clear about who we are and why we matter. In some states we have been told we are not needed in the preparation of teachers. We are not consulted when our own universities make decisions that would benefit from our expertise. We must resist the accusation that we are irrelevant. As the field grows, it will have to integrate knowledge about brain functioning with our understanding of learning and the design of learning environments. This will take quite a while and require sophisticated abilities to translate complex information into understandable but not oversimplified implications for teaching. Finally, we have to resist splintering into camps that spend most of their energy attacking the world views of the other camps.

7 How do you balance all the different aspects of your life including: teaching, writing, research, leadership, family, and recreation?

Balance is not my strong suit. I'm better at intensity and focus. I learned when my daughter was very young that I could not enjoy the luxury of empty time. I am usually doing several things at once. Laundry, writing, and cooking—they go well together. I can get up from the computer, dump another load in the washer while I mentally edit a paragraph, then check the soup and return to the computer with an idea about how to improve the paragraph. When I jog, I either watch the news while plodding on a tread mill, or run outside with a friend so we can catch up on each other's lives. I have a portable computer, so every plane trip is worth at least 5 pages of writing. On the way to work I listen to tapes of AERA sessions I missed or treat myself to music. If I am doing only one thing, I am falling behind. I write at home. I am connected by fax and modem to colleagues around the country and to the Rutgers computer. When I go to Rutgers, I give my complete attention to teaching, students, and department business. Because my daughter is away at college now, I have no trouble writing every night or all day Saturday, but I also take total breaks from work. My style is to work intensely for a period of time, then play for a few days, then return to the work. My favorite weekend trips are to Washington DC, Boston, Philadelphia, and New York (in that order). I like to get to a beach once or twice a year and read novels all day. And I love to dance. A few years ago I won the twist contest at a New Year's Eve party (of course, everyone won something) and I am planning to learn cajun dancing in time for the New Orleans meeting of AERA next April. Come to the Division K reception April 5th at 7:30 PM and see if I succeeded. The reception will be cosponsored by AACTE, AFT, NEA, and Allyn & Bacon—we hope to have a great band!

MESSAGE FROM PRESIDENT RICHARD C. PUGH

The Mid-Western Educational Research Association elects a new Vice President each year who subsequently becomes President-elect, President, and Immediate Past President for a four-year commitment of service to the Association. In alternate years the Association elects a new Member-at-Large for a two-year term. Approximately half of the MWERA Association Council members are elected each year for a two-year term. The Nomination Committee consists of the current President, the President-elect and the Immediate Past President with the President serving as Chair.

I invite you as a member to participate in this important process by recommending the nomination of individuals who you consider qualified candidates for these positions for 1995-96. They will be formally nominated during the annual meeting that is scheduled for October 12-15, 1994 and will be voted on during the spring of 1995. If elected, they will officially assume their roles at the annual meeting in October, 1995.

For your information in making your recommendations, the Association Bylaws state that only members in good standing may be nominated and hold elective office. The duties of the Vice President are numerous, including the very important responsibility of serving as the Annual Conference Program Chair in the year following election as Vice President. The Member-at-large duties include the evaluation of the Annual Conference and serving as Chair of the Membership Committee. Association Council members serve to review and approve all Association policy and take active roles in governance at all levels.

Recommendations for nominations should be addressed to me at the Wendell W. Wright Education Building, Indiana University, Bloomington, IN 47405 or by internet address PUGH@UCS.Indiana.Edu. The Nominations Committee will meet in January, 1994, to begin formulating a slate for the Association to consider at the Annual Meeting next October. Your recommendations would be most helpful if they were received prior to our January meeting.

MWERA Membership Application

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1994 dues of $10 for students and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to*: Charles C. Anderson, Jr., MWERA Executive Officer, 1332 Southwind Drive, Northbrook, Il, 60062; phone (708) 564-4796.

Name (first, middle initial, last) _____

Mailing address _____

City _____ State _____ Zip _____

Home phone ( ) _____ Office phone ( ) _____

Highest degree: _____ Area of specialization: _____

Instituition/Employer: _____

MWERA division preferences: _____

E-mail address: _____

AERA member? _____ Division(s): _____

If applying for student membership, please include a copy of your student ID.

477

1993 Convention Pictures
Bismarck Hotel, Chicago
October 13-16, 1993

(L toR): Barbara Plake presents Isadore Newman and Gregory Marchant with certificates of appreciation for their role as Editors of Mid-Western Educational Researcher from 1991 through 1993.

President Kenneth Kiewra greets the convention attendees.

(L to R): Jere Brophy, Luncheon Speaker, chats with Thomas Andre, Program Chair.

The General Business Meeting was held in the Maximilian Room.

Mid-Western Educational Research Association

Call for Program Proposals

Proposal Deadline: May 15, 1994

Annual Meeting: October 12-15, 1994 Bismarck Hotel, Chicago Illinois

Gregory J. Marchant, Program Chair

Plan now on being part of the 1994 annual meeting of the Mid-Western Educational Research Association by submitting a proposal for a paper presentation, symposium, workshop, or alternative format presentation. The MWERA annual meeting has been described as one of the most professional and collegial conferences of its kind. You will be presenting your research along with some of the most established names in education, as well as beginning researchers and graduate students. The conference is held in downtown Chicago in the Bismarck Hotel, which offers quality accommodations and facilities at a reasonable price. This makes the MWERA conference an affordable enjoyable professional experience. Develop a proposal and encourage your colleagues and students to participate and attend.

Conference Highlights

This year's annual meeting is shaping up to be a very special event. Wednesday afternoon workshops will be followed by a special evening panel discussion on motivation issues in education. One member of that panel, Lyn Corno, will be delivering the keynote address on Thursday morning. Thursday will also include a special panel on teacher education featuring Martin Haberman and Thomas Lasley. Publishers will be displaying their offerings in the Friday exhibits hall. Friday's luncheon speaker is Robert Slavin. Friday afternoon will include a workshop designed for graduate students on getting and keeping an academic position, panel discussions on minority issues in research and teacher education, and on issues in teaching multivariate statistics. Rick Pugh will deliver his Presidential Address on distance education, and a forum for education deans to discuss issues related to faculty research is scheduled for Saturday morning. Morning coffee, division meetings, a social, a fun run, and the President's reception round out the planned activities.

Wednesday, October 12
Workshop: Standards and Practices in Qualitative Research
Workshop: Research and Supervision in Teacher Education
Evening Panel Discussion: Motivation Issues in Education
Featuring: Lyn Corno, Teachers College-Columbia U.
Paul Pintrich, University of Michigan
Dale Schunk, Purdue University

Thursday, October 13
Divisions C & G Morning Coffee Meeting
Keynote: Lyn Corno, Teachers College-Columbia University
Concurrent Sessions
Panel on Context Considerations in Teacher Education
Including: Martin Haberman, U. of Wisconsin-Milwaukee
Thomas Lasley, University of Dayton
Evening Social

Friday, October 14
Divisions B, E, F, I, & K Morning Coffee Meetings
MWERA Business Meeting
Luncheon Address: Robert Slavin, Johns Hopkins University
Exhibits

Friday, October 14 (continued)
Workshop: Getting and Keeping an Academic Position
Panel: Minority Issues in Research and Teacher Education
Including: Jesus Garcia, University of Illinois
Barbara Shade, University of Wis-Parkside
Panel: Issues in the Teaching of Multivariate Statistics
Featuring: Robert S. Barcikowski, Ohio University
Stephen Jurs, University of Toledo
John Kennedy, Ohio State University
Joel Levin, University of Wisconsin
Isadore Newman, University of Akron
President's Reception

Saturday, October 15
MWERA Fun Run
Divisions A, H, & J Morning Coffee Meetings
Presidential Address: Distance Education
Richard Pugh, Indiana University
Dean's Forum on Faculty Research
Paper and Symposium Sessions until noon

Changes for this Call for Proposals:

* Deadline: Proposals must be received by May 15, 1994.
* Subject Descriptors: Authors should provide two descriptive terms to be used in a subject index in the program and published abstracts.
* Sub-division Chairs: Sub-division chairs have been identified for Divisions G and K. Please send your Division G and K proposals to the appropriate sub-division.
* Poster-tables: An alternative format for presentation will be poster tables. This will function as a regular poster session (a poster highlighting the paper will be produced by the presenter), however that poster will be laid on top of the table instead of being placed upright.
* MWERA On-line: A copy of this Call is currently available and the Conference Program, and the Meeting Abstracts will be available upon request from 00GJMARCHANT@BSUVC.BSU.EDU

GENERAL INFORMATION

1. Proposals may be in the form of alternative sessions, symposia, scholarly papers, or poster-tables. Participants are encouraged to develop proposals that best communicate their research and theoretical ideas and/or provide for scholarly debate about research and theoretical issues. MWERA sessions are designed to promote communication about education and educational research. It is contrary to MWERA policy to present previously published papers or to promote a commercially available product or service (except for Exhibits) that go beyond the limits of appropriate scholarly/scientific communication. Indviduals interested in displaying educationally related products or services should contact Sharon McNeely, P.O. Box 34421, Chicago, IL 60634. (312) 794-2788.
2. **Deadline: All proposals must be received no later than May 15, 1994.**
3. All proposals will be peer reviewed.
4. Any educational researcher, whether MWERA member or not, may submit a proposal. **Non-members whose proposals are accepted must join MWERA upon notification of an accepted proposal.**
5. MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals. Unless expressly prohibited in writing by the author(s), summaries may also be made available to the press or other interested parties upon request. Such limited distribution does not, of course, preclude subsequent publication of a summary or complete paper by the author(s). Authors are encouraged to submit their papers to ERIC and to consider publication in the *Mid-Western Educational Researcher*.
6. **All persons attending the Annual Meeting, including participants, are required to register for this meeting and to be members of MWERA.** All sessions listed in the program will be open to anyone registered for the meeting. A fee will be charged and enrollment may be limited for workshops. Materials for registering for the Annual Meeting will be published in the *Mid-Western Educational Researcher* and available upon request.
7. **Participants in paper sessions, symposia, and alternative sessions must distribute complete papers or handouts to attendees at their sessions.** This handout should include a complete a copy of the paper, or a summary of the symposium talk or alternative presentation, as possible.
8. **Participants are responsible for submitting their written paper or summary to the Session Chair and Discussant,** Divisional Program Chair and Program Chair one month prior to the Conference (Sept. 12, 1994). Failure to do so may lead to elimination of the paper from the program.
9. Some papers will be accepted as poster-tables. Proposers will have the opportunity to indicate a preference for a poster-table or traditional paper sessions. For a poster-table the presenter will prepare a poster to lay on a table. **The program committee will make the final decision concerning format** based upon the nature of the paper, similar paper topics presented, and availability of rooms and tables. Proposers whose papers are accepted for poster-tables will be responsible for producing appropriate poster materials. Poster should measure approximately 3 x 3 feet.
10. **Overhead projectors will be available in every meeting room for use by presenters. No other AV equipment will be provided by MWERA.** If special AV equipment is needed, participants are responsible for providing such equipment at the participants' expense.
11. **Submission of a proposal entails an ethical responsibility on the part of the proposer to present the paper, symposium, or alternative session if it is accepted.** If a proposer becomes unable to present an accepted proposal, it is the responsibility of the proposer to arrange for some alternative means of distributing the paper and to notify the Program Chair in advance.

MWERA STUDENT RESEARCH INCENTIVE AWARDS

All graduate students who author or co-author an accepted proposal will receive a certificate of achievement. Up to 3 graduate students will be randomly selected from the group of graduate students who author or co-author a proposal to each receive a Research Incentive Award to be presented during the MWERA Business Meeting on October 14. Any graduate student who has authored/co-authored a research paper, is pre-registered for the 1994 Annual Meeting, and is present at the MWERA Business Meeting will qualify for an award. The Research Incentive Award will consist of a free membership in MWERA for the coming year and free registration at the next annual meeting.

BEST COPY AVAILABLE

GUIDELINES FOR ALTERNATIVE SESSION PROPOSALS

Alternative session proposals are designed to explore alternative ways of presenting and communicating educational research. They are limited only by your creativity and the requirements to fit within the time restrictions of MWERA sessions and to not entail any additional expense to MWERA. As suggested by AERA, experimental formats do not necessarily have to be radical. A single paper presented with several discussants whose function it is to lead small group discussions would be considered experimental. A Panel Discussion format in which four or five scholars each give a short (e.g. 5 minute) position statement on a noteworthy or controversial issue and then a discussion the panelists and audience ensues would also be considered experimental. A debate between proponents of alternative views on a controversial issue might provide another example. A media-driven session would be another example.

MATERIAL TO SUBMIT WITH AN ALTERNATIVE SESSION PROPOSAL

1. ***Alternative Session Proposal Cover Sheet*** (see attached). Six copies with all applicable items completed.
2. ***Summary.*** Six copies of a 2-3 page single-spaced summary for use in judging the merits of the session. Three copies of the summary should include the name(s) and institutional affiliations of the organizer, session chair, participants/authors, and discussants (or other individuals who may participate in the alternative session). Three copies should omit that information unless the identity of the participants is a critical component in evaluating the value of the proposal. Panel Discussions and other proposals in which the names and reputations of the participants are part of the value of the proposal should include the names on all six copies. Proposals that use an alternative format to describe the results of an empirical investigation should provide for blind review. Proposers should use their best judgment in this regard. Describe the nature and format of the alternative session. If there are invited participants, indicate who they are and what their roles and contributions will be. Summarize the content to be presented or discussed in the session. Make clear the scientific/scholarly value of the session and the theoretical and empirical issues addressed. Make clear how the session represents an alternative to traditional paper/poster and symposium sessions. Examine the guidelines for paper and symposium proposals and describe as many of the types of information presented there as are relevant and applicable to your proposal. Remember the reviewers must evaluate both the worth of the content and the format.
3. ***Abstracts.*** Six copies, as appropriate, three with the name(s) and institutional affiliation(s) of the author(s)/participant(s), three without the name(s) and institutional affiliation(s). A 150-200 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the Summary guidelines. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. An abstract longer than 150 words will not be published. Include a word count at the end of the abstract. On the copies including the name(s) type the following information at the top left margin of the page: Title of Paper, Author(s), Institutional affiliation(s).
4. ***Envelopes.*** Five stamped self-addressed business-size envelopes for (1) acknowledgement of the receipt of the proposal, (2) notification of the decision of the program committee, (3) notification of the scheduled session time, (4) a reminder to submit the paper to the discussant, session chair, divisional program chair, annual meeting program chair, and (5) notification of receipt of the paper.
5. ***Index Cards.*** (two, 3x5 index cards). These should contain: Title of Alternative Session, Name of Organizer/Proposer, Institutional Affiliation, Complete Address with ZIP Code, Business Telephone Number with Area Code, Evening Telephone Number with Area Code, FAX Telephone Number, E-mail Address.
6. ***List.*** Three copies (8.5x11) of a list of all author(s)/participant(s), including name(s), institutional affiliation(s), complete address(es), day and evening telephone number(s), FAX number(s), E-mail address(es).

GUIDELINES FOR PAPER/POSTER-TABLE PROPOSALS

1. Only papers not previously presented or published are eligible.
2. Papers may be given as a presentation to be grouped with other papers describing empirical research or as poster-table sessions. The proposer may indicate a preference for a presentation or for a poster-table session. The Program Committee reserves the right to place papers into either a poster-table or a paper presentation session in order to best meet the needs of the program.
3. The Program Committee will group papers into sessions organized by topics of interest to the conference. A discussant will be assigned to comment on the papers in most paper sessions. Those presenters assigned a discussant are to provide a copy of the paper to the discussant one month prior to the meeting.
4. Generally, papers will be allotted no more than 15 minutes per presentation. It will be the responsibility of the Session Chair to consult with the presenters, allocate time, and ensure that the agreed schedule is followed. Poster-table sessions will last approximately 50 minutes.
5. It is the responsibility of the authors of an accepted proposal to appear at the Annual Meeting to present the paper. If unforeseen circumstances arise that prevent an author from presenting a paper, it is his/her responsibility to arrange for a suitable substitute to make the presentation, discuss the arrangements with the Session Chair, and inform the Divisional Chair and Annual Meeting Program Chair: Greg Marchant, Educational Psychology, Ball State University, Muncie, IN 47306-0595; Phone: (317) 285-8505; E-mail: 00GJMARCHANT@BSUVC.BSU.EDU

MATERIALS TO SUBMIT WITH A PAPER/POSTER-TABLE PROPOSAL

1. ***Proposal Cover Sheet*** (Six copies). See attached forms.
2. ***Summary*** (6 copies of a 2-3 page summary typed single-spaced on 8.5 x 11 paper with one inch margins in no smaller than 10 point type). Three copies of the summary should include the name(s) and institutional affiliations of the author(s). Three copies should omit that information. It should contain as many of the following sections as applicable:
   a. Title of Paper.
   b. Name of Author(s)-(3 copies only).
   c. Institutional Affiliation of Author(s)-(3 copies only).
   d. Objectives.
   e. Perspectives(s) or theoretical framework (brief literature review).
   f. Methods: data source (subjects), instruments, techniques, procedures.
   g. Results, conclusions, or point of view.
   h. Educational/scientific importance of the study.
3. ***Abstract*** (6 copies: three with the name(s) and institutional affiliation(s) of the author(s), three without the name(s) and institutional affiliation(s).) A 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the Summary guidelines. Use clear, precise language and no

abbreviations confusing to readers unfamiliar with the discipline. An abstract longer than 150 words will not be published. Include a word count at the end of the abstract. On the three copies including the name(s) type the following information at the top left margin of the page: Title of Paper, Author(s), Institutional affiliation(s).

4. ***Envelopes*** (5 self-addressed, stamped, business-size envelopes). These will be used to inform you of (1) the receipt of the proposal, (2) the reviewers' decisions, (3) the scheduled session time, (4) a reminder to forward the paper to the Session Chair, Discussant, Divisional Chair, and Annual Meeting Program Chair, (5) the receipt of the complete paper.

5. ***Index Cards*** (two, 3x5 index cards). These should contain: Title of Paper, Name of Presenting Author, Institutional Affiliation, Complete Address with ZIP Code, Business Telephone Number with Area Code, Evening Telephone Number with Area Code, FAX Telephone Number, E-mail Address

6. ***List.*** Three copies (8.5x11) of a list of all author(s), including name(s), institutional affiliation(s), complete address(es), day and evening telephone number(s), FAX number(s), E-mail address(es).

GUIDELINES FOR SYMPOSIUM PROPOSALS

A symposium is intended to provide an opportunity for examination of a specific problem or topic from a variety of perspectives. In addition to allowing for informative discussion, a symposium should provide for the presentation of alternative solutions or interpretations either of a common problem or in relation to a complementary theme. This purpose is best served when individuals with diverse or conflicting views are allowed to interact on a topic of sufficient scope and importance. It should be noted that a symposium should not be merely a presentation of a set of related papers. While such complementary papers are clearly worthwhile, they should be submitted as individual papers with an indication of suggested grouping on the Cover Sheet. Symposia should allow time for discussion between the presenters and the audience. It is recommended that there be no more than 3-4 presenters at a symposium.

RESPONSIBILITY OF ORGANIZERS OF SYMPOSIA

It is the responsibility of the symposium organizer to select the topic and to solicit speakers and discussants. Organizers of symposia must have the consent of all participants before submitting the proposal. Organizers not wishing to chair the session must invite chairpersons. The organizer of a symposium is responsible for ascertaining that each person named as a participant will be present at the meeting if the session is accepted. Should unforeseen circumstances prevent a participant from attending, it is the responsibility of the organizer to find a suitable replacement and notify all other participants in the session as well as the Divisional Chair and Annual Meeting Program Chair. Participants in a symposium must submit a summary of their remarks to the discussant(s), the other participants, the symposium chair, and the discussant one month prior to the convention (Sept. 12, 1994). Only the organizer will be notified of the acceptance of a symposium; he/she is responsible for notifying the other participants in the Symposium.

MATERIALS TO BE SUBMITTED WITH A SYMPOSIUM PROPOSAL

1. ***Symposium Proposal Cover Sheet*** (6 copies). See form.
2. ***Summary*** (6 copies of a summary typed single spaced on 8.5x11 paper with one inch margins in no smaller than 10 point type). Include the following:
   a. *Title of Symposium*
   b. *Name of Organizer*
   c. *Institutional Affiliation of Organizer*
   d. *Name of Chair*
   e. *Institutional Affiliation of Chair*
   f. *Names of Participants*
   g. *Institutional Affiliation of Participants*
   h. *Summary of Symposium* including: (1) Overview. A 300 word overview of the symposium including: topic, objectives, approaches, planned format, (2) 300 word summaries of each of the symposium presenters' presentations including titles.
3. ***Abstract.*** 6 copies with the name(s) and institutional affiliation(s) of the author(s). A 150-200 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. The Abstract should contain, in abbreviated form, information listed in the Summary guidelines. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. An abstract longer than 200 words will not be published. Include a word count at the end of the abstract. Include the following information typed at the top left margin of the page: Title of Symposium, Organizer, Chair, Presenters, Discussants, Institutional affiliation(s) of each.
4. ***Envelopes*** (5 self-addressed, stamped, business-size envelopes). These will be used to inform you of (1) the receipt of the proposal, (2) the reviewers' decisions, (3) the scheduled session time, (4) a reminder to forward the Symposium to the Session Chair, Discussant, Divisional Chair, and Annual Meeting Program Chair, (5) the receipt of the complete Symposium papers.
5. ***Index Cards*** (two, 3x5 index cards). These should contain: Title of Symposium, Name of Organizer, Institutional Affiliation, Complete Address with ZIP Code, Business Telephone Number with Area Code, Evening Telephone Number with Area Code, FAX Telephone Number, E-mail Address
6. ***List.*** Three copies (8.5 x 11) of a list of organizer, chair, all presenters, including name(s), institutional affiliation(s), complete address(es), day and evening telephone number(s), FAX number(s), E-mail address(es).

GUIDELINES FOR WORKSHOP PROPOSALS

Workshop topics should be of interest and use to a number of MWERA members. Presenters will receive an honorarium based on the number of participants attending the workshop. All persons listed as presenters are required to appear at the conference and present the workshop at the designated time. Most workshops will be held on Wednesday afternoon, October 12, 1994.

MATERIALS TO BE SUBMITTED WITH A WORKSHOP PROPOSAL

1. ***Cover Sheet*** (Use Workshop Proposal Cover Sheet. See form.) Send two copies with all items complete. Indicate "Workshop" and the total amount of time you believe will be needed. Please note that in special circumstances a workshop may be allocated more than three hours.
2. ***Summary*** (3 copies of a 2-3 page summary typed single-spaced on 8.5 x 11 paper). This will be used to judge the proposal. The summary should include information such as the following.
   a. *Objectives (knowledge, skills for participants)*
   b. *Suggested entry-level skills for participants*
   c. *Educational or scientific importance of the topic*
   d. *Perspectives, orientations, or theoretical frame work*
   e. *Methods or techniques of instruction*
   f. *Description of presenter's relevant experience*
3. ***Abstract*** (3 copies). A 150-200 word, narrative abstract should be prepared for publication in the Annual Meeting Abstracts. This should briefly describe the objectives, content, and methods of the workshop. Use clear, precise language and no abbreviations confusing to readers unfamiliar with the discipline. Abstracts should be typed single-spaced on 8½ x 11 paper. An

abstract longer than 200 words will not be published. For all copies of the abstract, the title of the workshop, the presenter(s), and their institutional affiliation(s) should be typed at the top left margin, in the format below:
Title of Workshop (Caps and lower case)
PRESENTER(S) (ALL CAPS), Institutional affiliation (Caps and lower case)

4. ***Envelopes*** (3 self-addressed, stamped, business-size envelopes). These will be used to inform you of (1)receipt of the proposal, (2) the reviewers' decision, and (3) the scheduled session time.

5. ***Index Cards*** (two, 3 x 5 index cards). These should be prepared as follows:
Title of Workshop
Name(s) of Workshop presenters (last name first), identify contact person, Institutional affiliations, Complete address (with zip code) of contact person, Telephone number (with area code) of contact person

Mail Workshop Proposals to 1994 Workshop Coordinator: Linda E. Morrow, Chair, Department of Education, Muskingum College, New Concord, OH 43762; (614) 292-4094 ext. 469.
Proposals must be received by May 15, 1994.

WHERE TO SUBMIT PROPOSALS

Proposals should be submitted to the Division Program Chair listed below whose division best fits the content of the proposal. Proposals may be submitted to only one division. (However, a proposal may be submitted as a cross-division alternative session. In that case, the proposer must contact the Division Chairs of the respective divisions and discuss the proposal with them prior to submitting it. If the Division Chairs believe that such a cross-divisional proposal is the best way to submit the proposal, it should be submitted to both divisions with an explanatory letter. Such proposals will be reviewed by both divisions.) If a proposal does not fit any of the indicated divisions, it should be sent to the Annual Meeting Program Chair: Gregory J. Marchant, Educational Psychology, Ball State University, Muncie, IN 47306-0595. Please contact the Program Chair prior to submission: telephone (317) 285-8505, E-mail 00GJMARCHANT@BSUVC.BSU.EDU

Proposals must be received in hard copy form by May 15, 1994.

DIVISION A: ADMINISTRATION

Research, theory, development, and improvement of practice in the organization and administration of education

Carol B. Furtwengler
115 Hubbard Hall-Box 142
Wichita State University
Wichita, KS 67260-0142
Phone: (316) 689-3325
E-mail: CFURTWEN@TWSUVM

DIVISION B: CURRICULUM STUDIES

Curriculum and instructional practice, theory, and research

Linda S. Behar
2412 Norman Hall
Dept. of Educational Leadership
University of Florida
Gainesville, FL 32611
Phone: (904) 392-2391
E-mail: LSBEHAR@NERVM.NERDC.UFL.EDU

DIVISION C: LEARNING AND COGNITION

Theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors

Jennifer J. Fager
College of Education and Counseling
South Dakota State University
Box 507 Wenona Hall
Brookings, SD 57007-0095
Phone: (605) 688-4362
E-mail: ED07@SDSUMUS.SDSTATE.EDU

DIVISION D: MEASUREMENT AND RESEARCH METHODOLOGY

Measurement, statistical methods, and research design applied to educational research

Jeffery B. Hecht
336 Degarmo Hall - M.C. 5900
Illinois State University
Normal, IL 61761-6901
Phone: (309) 438-5585
E-mail: JBHECHT@ILSTU.EDU

DIVISION E: COUNSELING, HUMAN DEVELOPMENT, AND SPECIAL EDUCATION

Special education, human development, and the application and improvement of counseling theories, techniques, and training

Eddie Glenn
Department of Counsellor Education
136 Graduate Education Building
University of Arkansas
Fayetteville, AR 72701
Phone: (501) 575-3509

DIVISION F: HISTORY AND PHILOSOPHY OF EDUCATION

Findings and methodologies of historical research in education

Gary D. Shank
EPCSP Department
Northern Illinois University
DeKalb, IL 60115
Phone: (815) 753-8448
E-mail: P30GDS1@NIU.BITNET

DIVISION G: SOCIAL CONTEXT OF EDUCATION AND MOTIVATION

Sub-Division G1:
Practice and research related to cultural and multicultural contexts

Mary Ann Flowers
Curriculum and Foundations
Cleveland State University
Euclid at 24th Street
Cleveland, OH 44115
Phone: (216) 687-4577

Sub-Division G2:
Theory, practice, and research on social, moral, affective, and motivational characteristics and development

Linda D. Hayes
Curriculum and Foundations
Cleveland State University
Euclid at 24th Street
Cleveland, OH 44115
Phone: (216) 523-7138

DIVISION H: SCHOOL AND PROGRAM EVALUATION

Research and evaluation to improve school practice, including program planning and implementation

Corenna C. Cummings
EPCSE
Northern Illinois University
DeKalb, IL 60115
Phone: (815) 753-8423

DIVISION I: PROFESSIONAL AND MEDICAL EDUCATION

Educational practice, research, and evaluation in the professions (e.g. medicine, nursing, public health, business, law, and engineering)

Richard M. Smith
University of South Florida
15426 Plantation Oaks Drive, Apt. 11
Tampa, FL 33647
Phone: (813) 974-3220

DIVISION J: POSTSECONDARY EDUCATION

Broad range of issues related to two-year, four-year, and graduate education

Martha Wilson
Education Department
Renner Hall - Room 130
Capital University
Columbus, OH 43209
Phone: (614) 236-6303

DIVISION K: TEACHING AND TEACHER EDUCATION

Sub-Division K1:
Research on teacher preparation, the teaching profession, and teacher development

Deborah L. Bainer
Ohio State University-Mansfield
1680 University Drive
Mansfield, OH 44906
Phone: (419) 755-4287

Sub-Division K2:
Research on teaching, conditions and behaviors of teaching

Kim K. Metcalf
Teacher Education Laboratory
W.W. Wright Education Bldg.
Indiana University
Bloomington, IN 47405-1006
Phone: (812) 856-8125
E-mail: kmetcalf@iubacs.bitnet or
kmetcalf@ucs.indiana.edu

WORKSHOPS

Linda E. Morrow
Muskingum College
6740 Friendship Drive
New Concord, OH 43762
Phone: (614) 826-8033

MWERA/TEACHER LIAISONS

Sharon McNeely
Northeastern Illinois University
P.O. Box 34421
Chicago, IL 60634
Phone: (312) 794-2788

Jay C. Adler
Cary School District 26
405 West Main Street
Cary, IL 60013
Phone: (708) 639-2148

DEANS' FORUM COORDINATORS

Roy A. Weaver
Office of the Dean
Teachers College
Ball State University
Muncie, IN 47306
Phone: (317) 285-5254
E-mail: 00RAWEAVER@BSUVC.BSU.EDU

Thomas Andre
Dept. of Psychology
W. 112 Lagomarcino
Iowa State University
Ames, IA 50011-3180
Phone: (515) 294-1754

ASSOCIATE PROGRAM CHAIRS

Carmen R. Giebelhaus, Ohio State University
Adria Karle-Weiss, Murray State University
Sharon McNeely, Northeastern Illinois University

ALTERNATIVE FORMAT, WORKSHOP, OR SYMPOSIUM PROPOSAL COVER SHEET

1994 MWERA Annual Meeting

SESSION TYPE **TIME REQUESTED**

_____ Alternative Format	___ 1 hour	___ 1 1/2hour	___ 2 hours	___ Other (specify)_____
_____ Symposium	___ 1 hour	___ 1 1/2 hour	___ 2 hours	
_____ Workshop	___ 2 hours	___ 3 hours	___ 4 hours	___ Other (specify) _____

Please print or type

Title

_____

Organizer's Name

_____
LAST NAME FIRST NAME MI

Affiliation _____

Complete address

_____

_____

Phone (____)_____ **FAX**(____)_____ **E-mail**_____

Are you a member of MWERA? ___ Yes ___ No

NOTE: All presenters must be MWERA members and pay registration for the Annual Meeting

Attach a separate sheet listing name, institutional affiliation, complete address, telephone number, and title of presentation for each participant. Include and identify the chair, discussant(s), and presenters.
(Please type this information.)

_____ **One or more of the participants is a graduate student.**
Please clearly indicate which presenters are graduate students.

1-2 Word Descriptors for Session _____ _____

I hereby certify that, if this proposal is accepted and placed on the program, all presenters of this proposal will register for the Annual Meeting, and be responsible for its presentation. I hereby declare that I have assurances from the other participants that they will register and make their respective presentations.

_____
SIGNATURE DATE

Be certain all of the following are enclosed:
SIX SETS OF MATERIALS, STAPLED TOGETHER, EACH CONTAINING ONE OF EACH OF THE FOLLOWING:

- Symposium/workshop proposal cover sheet
- Separate sheet listing all participants and presentations
- 3-5 page Summary of the session
- 150-200 word Abstract (to appear in the Meeting Abstracts)
- Self-addressed stamped envelope (5 total)
- 3 x 5 index card (2 total, see guidelines)

THIS INFORMATION MUST BE RECEIVED BY MAY 15, 1994.

BEST COPY AVAILABLE

PAPER/POSTER-TABLE PROPOSAL COVER SHEET
1994 MWERA Annual Meeting

REQUESTED SESSION TYPE: _____ Paper presentation _____ Poster-table

Please print or type

Title_____

Presenting Author _____
LAST NAME FIRST NAME MI

Affiliation _____

Complete address _____

_____

Phone (_____)_____ **FAX**(_____)_____ **E-mail**_____

Are you a member of MWERA? ___ Yes ___ No

NOTE: All presenters must be MWERA members and pay registration for the Annual Meeting

Attach a separate sheet listing name, institutional affiliation, complete address, telephone number, for each co-author. (Please type this information. ONLY PRESENTING AUTHORS WILL BE SCHEDULED TO AVOID CONFLICTS).

_____ **One or more of the authors are graduate students.**
Please clearly indicate which authors are graduate students on an attached sheet (include paper title, name of graduate student, and address).

1-2 Word Descriptors for Paper _____ . _____

_____ **This paper should be grouped in the same session with other papers submitted to the MWERA Annual Meeting. Attach a separate sheet listing paper titles, presenting authors, and institutional affiliations.**

I hereby certify that, if this paper is accepted and placed on the program, I will be a member of MWERA, register for the Annual Meeting, appear, and present the paper.

_____
SIGNATURE DATE

Be certain all of the following are enclosed:
SIX SETS OF MATERIALS, STAPLED TOGETHER, EACH CONTAINING ONE OF EACH OF THE FOLLOWING:

- Paper proposal cover sheet
- Separate sheet listing all authors (if more than one author)
- 2-3 page Summary
- 100-150 word Abstract (to appear in the Meeting Abstracts)
- Self-addressed stamped envelope (5 total)
- 3 x 5 index card with information identified in the guidelines (see guidelines, 2 total)

THIS INFORMATION MUST BE RECEIVED BY MAY 15, 1994.

BEST COPY AVAILABLE

Research Alive: Educational Research Can Inform Educational Practice

Jack Snowman, Southern Illinois University at Carbondale

Every fall and spring semester, I teach a doctoral seminar on behavioral foundations of education that all students in the College of Education are required to take. The topic of discussion for the second week of class is, "To what degree does educational research contribute to improvements in classroom learning?" The reading assignment for that week is a pair of articles from volume 65, number 7 of *Phi Delta Kappan*. The first article, written by Elliott Eisner, is titled, "Can Educational Research Inform Educational Practice?" The second article, written by Eva Baker, is titled, "Can Educational Research Inform Educational Practice? Yes!" As you can gather from the titles, Eisner was somewhat less sanguine about the relationship between research and practice than was Baker.

In a nutshell, Eisner argued that educational research does not serve the classroom teacher at any level of education particularly well for at least three reasons: (a) Research is not informed by well-developed theories of instruction that specify potential relationships among such variables as teaching methods, subject matter, characteristics of teachers, characteristics of students, and the learning process. As a result, some of the subtle but powerful aspects of teaching, such as values, timing, tempo, gesture, expression, silence, and emphasis are overlooked by most researchers. (b) Contemporary research studies are not sufficiently long to adequately study the variables that are examined. After reviewing all of the experimental studies that were published in one year in a prominent educational journal, Eisner calculated the median treatment time at 72 minutes. (c) Researchers are more interested in conducting studies that address theoretical issues than in studies that address the everyday concerns of teachers.

Baker responded that while the problems cited by Eisner were valid ones, research does inform educational practice, and has done so for some time. This sentiment has been expressed more recently by Herbert Walberg. Writing in volume 71, number 6 of *Phi Delta Kappan*, Walberg cites several psychological elements of instruction (e.g., specific objectives, pretests, graded homework, reinforcement, teacher questions) that have been shown in most studies to have at least moderate positive effects on achievement.

Although I agree with the criticisms made by Eisner, it should come as no surprise to regular readers of this column that I agree even more with the basic argument made by Baker and by Walberg. Part of the reason for my agreement with Baker and Walberg can be seen in the summaries of the following recently published studies, each of which suggests a way to improve student performance in the classroom.

Learning is Believing

Since learning typically begins (or doesn't begin) with the attitudes, beliefs, and values that students bring with them to the classroom, I'm going to begin with a study that has examined the development of high school students' epistemological beliefs and the influence that those beliefs have on overall academic performance.

In 1988, Ron Schmeck, my colleague from the psychology department at Southern Illinois University, speculated about the relationship between epistemological beliefs and learning strategies in a book edited by Claire Weinstein, Ernest Goetz, and Patricia Alexander. Because of the basic nature of such beliefs, he argued that even a small change at this level will have a significant effect on how students approach learning tasks. "What might be the effect," he asked, "if every learning strategies training program included a section that addressed questions such as: What is education? What is learning? and What is the individual student's personal responsibility with regard to these processes?" Recent research by Marlene Schommer of Wichita State University that appeared in volume 85, number 3 of the *Journal of Educational Psychology* indicates that understanding the nature and development of students' epistemological beliefs might well provide an avenue for improving both how well students approach learning tasks and how well they perform.

Schommer administered an epistemological questionnaire to 1,182 male and female freshmen, sophomore, junior, and senior high school students. Statements about knowledge and learning(e.g., "Almost all the information you can learn from a textbook you will get during the first reading") were rated on a five-point scale and reflected a continuum of beliefs that ranged from naive to sophisticated. A factor analysis of the students' responses yielded a four-factor solution that explained 53.3% of the variance. Stated from the naive perspective, these factors were labeled Fixed Ability (the ability to learn is unchangeable), Simple Knowledge (knowledge is discrete, unambiguous, and handed down by authority), Quick Learning (Learning is quick or not at all), and Certain Knowledge (Whatever we have learned we know for certain).

An analysis of how males and females responded to the questionnaire, and how epistemological beliefs develop from the freshman through the senior year of high school yielded two statistically significant findings.

First, girls were less likely than boys to believe in fixed ability or quick learning (which may help explain the often made observation that adolescent girls are easier to raise than adolescent boys). Second, juniors and seniors were less likely than freshmen and sophomores to believe in simple knowledge, quick learning, or certain knowledge (but note that beliefs about fixed ability remained largely fixed). As Schommer notes, however, we shouldn't run to the bank too quickly with this second finding. Since her study used a cross-sectional design, there is no way to tell how many students with unchangeable, naive beliefs dropped out of school at the first opportunity. A longtitudinal design may reveal a different developmental pattern. If this turns out to be the

case at some later date, I'm sure it won't bother the readership of the Researcher who recognize that there is little about educational and psychological knowledge that is certain.

An analysis of the relationships among epistemological beliefs, intelligence, and grade-point average (GPA) found that the higher students scored on an IQ test and the less they believed in quick learning, simple knowledge, certain knowledge, and fixed ability, the higher were their GPAs.

Although Schommer's work was not designed to answer the question of whether classroom interventions can accelerate the development of epistemological beliefs, by generalizing from research on Piagetian stages of cognitive development and Kohlbergian stages of moral development, one can assume that the possibility exists, at least to some degree. If you are comfortable with this assumption, you might find the practical implications she offers to be of value. For example, teachers might want to focus more on helping students understand concepts and their interrelationships than on learning isolated facts by rote, assign more complex and time-consuming tasks, assign projects that reveal why conclusions about some phenomenon changed over time, and design test items that allow for alternative acceptable responses.

To Question, or Not to Question? That is the Question

Previous research on student-generated questions tells a good news-bad news story. On the one hand, most studies show that students who ask themselves higher level questions (usually defined as anything above the Comprehension level of Bloom's Taxonomy) as they read score higher on tests of comprehension than do students who generate lower level questions. On the other hand, most of the questions asked by elementary grade students are lower level in nature. Some likely reasons for this deficiency in question-asking are that children are not systematically taught how to generate such questions as they read, most of the question-asking modeled by teachers is of the low level variety, and children do not believe that it is their place to ask questions. Clearly, then, educators need to know how to foster high level question-asking by students. How one might accomplish this goal by using cooperative learning and/or mastery learning techniques was examined by Zemira Mevarech and Ziva Susak of Bar-Ilan University, Israel in an article published in volume 86, number 4 of the *Journal of Educational Research*.

Cooperative learning was chosen as one approach to the training of student question-asking because children in peer groups are more likely to ask questions of peers than of adults, and their answers are likely to be longer and more complex. Mastery learning was chosen as another approach because its practice-with-feedback feature is known to be a powerful method for teaching complex cognitive skills.

Mevarech and Susak randomly assigned 271 third- and fourth-grade Israeli children to either a cooperative learning (CL), mastery learning (ML), cooperative-mastery learning (CML), or control condition, and then randomly assigned teachers to conditions. Over a two month period, each group worked through a common six-step curriculum unit that was linked to the reading text for that grade: distinguish between a question and an answer, understand the meaning of questioning words (e.g., who, what, where, when, why), classify questions according to students' suggestions, distinguish between higher level and lower level questions, generate questions and answer them, and practice asking and answering questions. At each step, students read a paragraph from the text, interpreted it, and then did seatwork activities.

The CL groups were composed of four to six students whose seatwork activities were specially designed booklets and group games. For example, a "fishing game" was used to help students distinguish between lower and higher level questions. Each student had to "fish" questions from a "pool," identify the cognitive level of the questions, and answer the questions. CL students often acknowledged, recognized, and praised each other's contributions. Children in the ML group completed their seatwork activities individually, after which the teacher provided feedback about its quality. Children whose responses did not meet a preset criterion were asked to keep working at the task until they achieved the mastery level. Children in the CML group worked in small, heterogeneous groups on the same activities as did the children in the CL group, were given individual feedback by the teacher, and were required to work at the task until the mastery level was attained. Children in the control group learned the same material via direct instruction. The teacher explained to the whole class the questioning skill in question, provided examples, asked the students to generate examples of their own, and used guided practice of the skill.

After the two-month treatment period, children were assessed for how well they could generate lower level and higher level questions, how fluent, flexible, and original their thinking had become (as measured by the "Improving a Toy" subtest of the Torrance Tests of Creative Thinking), and for how much of the curriculum they had learned (as measured by a 20-item multiple-choice test). Alternate forms of these same instruments were administered prior to the beginning of the experiment.

Although the average number of lower level questions posed by the students exceeded the average number of higher level questions by a wide margin (11.5 versus 3.4), the ML and CML groups exhibited about a fourfold increase in their frequency of higher level question-asking. The CL group increased its higher level question-asking by 33%, while the control group showed a 25% decrease. The ML and CML groups did not differ from each other in frequency of higher level question-asking, but both performed significantly better than the CL group which, in turn, outperformed the control group. For fluency and flexibility, the ML group significantly outscored the CML group, which significantly outscored the CL group. The fluency and flexibility scores of the CL group did not differ from those of the control group. There were no between-groups differences for originality. Finally, there were no significant between-groups differences for achievement.

In sum, this study demonstrates that relatively young children can be taught to improve their frequency of higher level of question-asking, and that either a mastery learning approach or a combined cooperative learning - mastery learning approach is the method of choice. Furthermore, the mastery approach to question-asking produced higher fluency and flexibility scores than did any of the other three approaches.

You Can Get There From Here, But You Need a Good Map

Research by Donald Dansereau and his associates at Texas Christian University in the late 1980s on the effects of knowledge maps found that they enhanced knowledge acquisition and transfer for undergraduates as compared to learning from standard text. Knowledge maps are spatial/visual arrangements of text ideas and their interrelationships that look something like flowcharts. The ideas are paraphrased and enclosed in a circle or ellipse; ideas that are related to each other are linked by lines or arrows that indicate the type of relationship. For example, ideas A and B may be linked by a line labeled with the letter L, indicating that A leads to B.

The likely reason why these knowledge maps work is that they quickly help students see the structure of a passage; that is, how the various concepts and facts that make up a passage relate to each other. But the passages used in these studies all dealt with a single topic. This limitation left open the question of whether knowledge maps would still be effective aids to learning when the passages contained (as most texts do) different but related topics. In a study reported in volume 61, number 1 of the *Journal of Experimental Education*, Richard Hall, Donald Dansereau, and Lisa Skaggs assessed how well each of four conditions (sequential text, comparative text, sequential map, and comparative map) helped students learn the information from a passage that contained two related topics.

In the sequential text condition, the two topics were presented sequentially (e.g., the sympathetic and then the parasympathetic divisions of the autonomic nervous system). The material in the comparative text condition was arranged according to related features (e.g., the part of the spinal cord from which nerves exit for the sympathetic and parasympathetic systems). In the sequential map condition, the maps for the two topics were presented one after another. In the comparative map condition, the knowledge maps for each topic were displayed side by side.

In the first of three 2-hour sessions, 92 undergraduates were given a 15-minute introduction to the nature and use of knowledge maps. They were told that they might be assigned to a map condition, and were shown how to use these maps to study the sequential presentation of information from a single topic and the simultaneous presentation of information from two related topics. Students were then assigned to one of the four conditions. In each condition, students were given material on the autonomic nervous system, and told to study it for four minutes. They then completed a questionnaire about their attitudes toward the subject, and were required to study the material for another 45 minutes.

Two days later, students completed a free recall test of the autonomic nervous system, read a second passage on the topics of descriptive versus experimental research designs for four minutes, completed another questionnaire, and then studied the material again for another 45 minutes.

The final session occurred two days after the second one. Students completed a free recall test on the research design material and vocabulary test that was used as a covariate.

The map groups recalled significantly more ideas than the text groups on the autonomic nervous system passage. There was no significant difference among the groups for recall of ideas on the research design passage. The questionnaire data was consistent with the recall data. Compared with students in the text groups, students in the map groups felt they learned more and found the material to be more organized.

There is Strength in Numbers and (Sometimes) in Diversity

Cooperative learning is an instructional tactic that is in the enviable (and somewhat unusual) position of being both extremely popular among educators from kindergarten through college and strongly supported by research findings. A characteristic of cooperative learning that is presumed to contribute to its effectiveness is heterogeneous groups—groups that are composed of students of different abilities, ethnic backgrounds, social class, and genders. Lower-ability students are supposed to benefit from having the higher-ability students serve as models of good thinking and problem solving, as well as from the direct help they get from higher-ability peers. Higher-ability students are supposed to benefit from the mental reorganization that occurs when they explain things to their peers. But, as Simon Hooper of the University of Minnesota points out in volume 85, number 3 of the *Journal of Educational Research*, research findings on the benefits of heterogeneous groups are inconclusive. Hooper argued that this inconsistency may be due to uncontrolled differences in how group members interact with one another. To test his hypothesis, Hooper provided cooperation training to fifth- and sixth-grade students, and examined how well heterogeneous groups, homogeneous groups, and individual students learned a computer-based lesson on arithmetic skills.

The students who participated in this study were classified as high or average ability according to how well they scored on the mathematics subscale of the California Achievement Test. The mean score for the high-ability students was at the 95th percentile. The mean score for the average ability students was at the 64th percentile.

The cooperation training that each student received was intended to illustrate the efficacy of group work and to promote effective intragroup interaction. The first goal was accomplished by having pairs of students and individual students solve two tasks (calculate the number of sides of a three-dimensional figure and classify objects as examples or non-examples of a concept), and by publicly comparing the performances of the pairs against those of the individuals. The second goal was accomplished by having groups of four students summarize, paraphrase, communicate, and check on the accuracy of a message (definitions of nonsense words and a story represented by a sequence of pictures). Students rotated through the roles of summarizer, paraphraser, and checker.

In addition to providing the students with cooperation training, observers were trained to classify intragroup communication into one of four categories: transmission of lesson content (e.g., reading material from the computer screen), helping behavior (e.g., explaining a solution process, correcting errors), positive

social comments (e.g., statements of praise or encouragement), and negative social comments (e.g., statements critical of the learning task or the partner).

The target of both the cooperation training and the observer training was a three-part computer-based mathematics tutorial. In order to progress to the next unit, students had to complete a mastery quiz. Students worked through the tutorial either in pairs or individually, and were paired in one of three ways: two high-ability students, two average-ability students, one high-ability student and one average-ability student. Measures were taken of number of mastery quizzes attempted, intragroup interaction, and achievement. The achievement test contained 40 items that measured factual knowledge, application, generalization, and problem solving.

Having students work through the program in pairs proved to be an efficient instructional tactic as paired students met the mastery criterion for each unit more quickly than did the students who worked alone.

With regard to intragroup interaction, high-ability students gave and received more help when they were paired with another high-ability student than when they were paired with an average-ability student. The average-ability students, on the other hand, did not change their help pattern as a function of group type.

Most research on cooperative learning finds that students who work in groups learn more than students who work alone. This study simply adds one more brick to that pile. Students who worked in pairs obtained higher scores on the achievement posttest than did students who worked alone. But some of Hooper's other findings challenge some of the standard beliefs about cooperative learning and should be investigated further by others. Most notably, high-ability students scored about the same as average-ability students when they were heterogeneously paired, but scored significantly higher than average-ability students when they were homogeneously paired. Finally, students who worked in heterogeneous pairs answered significantly more problem-solving items correctly than did students who worked in homogeneous pairs.

Testing, Testing, 1, 2, 3 (and 4, 5, 6, & 7)

In my last Research Alive column (volume 6, number 3), I summarized a study that reported a moderately positive effect size (about 1/3 of a standard deviation) for increased frequency of classroom testing. That is, students who took more tests during the course of a term scored higher on an end-of-term examination then did students who took fewer tests. Although many other studies and reviews have reported positive effects for this instructional tactic, contrary findings do exist. To clarify the inconsistencies about the effects of more frequent versus less frequent testing, Robert Bangert-Drowns, James Kulik, and Chen-Lin Kulik conducted a meta-analysis of this literature and reported their findings in volume 85, number 2 of the *Journal of Educational Research*.

Bangert-Drowns, Kulik, and Kulik located 40 studies that met their criteria of relevance (the studies had to have been done in real classrooms and used conventional classroom tests) and methodological adequacy, and reported three major findings.

First, the average effect size of frequent testing was .23. Students who were tested relatively more frequently scored .23 of a standard deviation higher on a final criterion test than did students who were tested relatively less frequently. In terms of percentile ranks, this translates to an increase from the 50th percentile to the 59th percentile. Second, a moderately large effect size (.54) was found when the frequently tested group (which, depending on the study, meant anything from 1 to 21 tests) was compared to a control group that received no tests. When the control students took at least one test, the average effect size dropped to .15. The third finding was perhaps the most interesting. Data from eight studies that directly compared three levels of testing frequency found that as the average number of tests taken by students increased, the average effect size increased, but at a diminished rate. Students in the intermediate-frequency conditions took an average of seven tests and scored almost 1/4 of a standard deviation higher on an end-of-term test than did students in the low-frequency conditions, who averaged only one test (average effect size = .23). Students in the high-frequency conditions, on the other hand, took an average of 23 tests and scored almost 1/2 of a standard deviation higher than did the low-frequency condition students (average effect size = .49). Thus, as Bangert-Drowns, Kulik, and Kulik point out, a threefold increase in test frequency (from seven to 23 tests) brings about only a doubling of effect size. This finding suggests that as students take more and more tests over the course of a term, they will probably score higher on a final exam, but the increases will become successively smaller. An additional analysis seemed to bear out this hypothesis. Increasing the number of tests per term from zero to two to four to seven would, according to a regression model constructed by the authors, increase performance on a final exam by .41 standard deviations, .49 standard deviations, and .56 standard deviations, respectively. If one were to give as many as 23 tests, the predicted effect size would be .74. These findings suggest that in most classroom situations a teacher should give somewhere between one and seven tests prior to a final exam.

Trends In Research On Teaching

Dr. Brophy delivered the luncheon keynote address at the annual meeting in Chicago on October 15, 1993. He is University Distinguished Professor and Co-Director of the Institute for Research on Teaching at Michigan State University.

Jere Brophy, Michigan State University

In this presentation I offer some reflections on the past 30 years or so of research on teaching. Let me begin by noting that although I take an interest in developing grounded theory, I approach research on teaching primarily from a practical rather than a theoretical standpoint. I think of myself as a functionalist, working inductively by first establishing empirical information about variables and their relationships, and then identifying the causal linkages that explain these relationships and developing implications for teachers.

I view both teaching and research as means, not ends. Teaching is action taken to help students make progress toward instructional goals. Research is action taken to answer some question. To evaluate either teaching or research, we need to consider both the importance of their goals and the degree to which they get accomplished. Good teaching is good because it succeeds in helping students attain worthwhile learning goals. Good research is good because it succeeds in answering worthwhile questions.

Classroom teaching is difficult to study because it is multifaceted professional practice that takes place in a complex and evolving interpersonal context. Nevertheless, research on teaching has begun to establish a knowledge base capable of informing teacher planning and decision-making. Some educators view this development with suspicion, believing that attempts to apply an ostensible knowledge base for teaching will place counterproductive pressures on teachers rather than supporting their development as professionals. I have two points to make in response to this important concern.

First, in theory, research-based information about teaching practices should empower teachers by enabling them to act confidently on the basis of well-established principles. An analogy to the medical profession illustrates this point. As my colleague, Charles W. (Andy) Anderson points out, if we had the choice of going to our regular physicians or to reincarnations of historically prominent physicians such as Galen and Hippocrates, we would stick with our regular physicians because they give us access to the vital medical knowledge and technology that have been developed since Galen or Hippocrates lived. Far from oppressing modern physicians or turning them into deskilled technicians, the proliferation of the knowledge base that undergirds their practice has had primarily empowering effects. Modern physicians can do many things that were unknown to medical pioneers, and they can use safe and efficient routines for doing things that formerly were chancy and dangerous. These advances have brought responsibilities as well (physicians can be sued for

malpractice), but their primary effects have been to expand the power of medical practice. Modern medicine demands professional judgments and offers opportunities for artistry and creativity as much as it ever did, but in addition to, rather than in the absence of, systematic application of scientific knowledge and technical skill. We can look forward to similar developments in the power of educational practice as the knowledge base informing the teaching profession expands.

My second point is an important qualification on the first: The developing research base will have these desirable effects only to the extent that it is understood and interpreted accurately. As a researcher who has generated some of this information, I recognize that it can be misinterpreted and misused. Consequently, along with making empirical contributions, I have emphasized writing textbooks and review articles in which research findings are summarized carefully and qualified appropriately. I will draw on some of these syntheses during this presentation to offer comments on several prominent lines of research, and then I will highlight some key findings from my own recent work in social studies. More extensive statements can be found in the sources listed in the bibliography.

Teacher Expectations

Until recently, most research in education was done by people like myself who got into education accidentally after being trained in psychology, sociology, or anthropology. When I first began research in classrooms, I was not so much an educational researcher as a clinical and developmental psychologist who happened to be studying psychological questions in classrooms. I later evolved into an educational researcher—a person who selects questions to study because they are important to education rather than to some other discipline.

My earliest work, done in collaboration with Tom Good, Carolyn Evertson, and others, linked teacher expectations and attitudes to student opportunity to learn and patterns of teacher-student interaction. I am proud of those contributions, but when I view them as an educational researcher, I find it ironic that we focused on those teacher expectations that have the least generalized and powerful effects on student learning, namely differential expectations for students in the same class. We have since come to appreciate that, for most teachers, these differential student achievement expectations are relatively minor variations around more general norms representing beliefs about what can be accomplished by the class as a whole. In turn, these class or grade-level expectations are shaped by the publishers' instructional materials and by local, state, national, and international assessment data, among other influences.

We are still struggling to understand expectation issues, but our purview has shifted from the micro to the macro level. Also, our terms of discourse have shifted from teacher expectations language to language associated with national standards and goals, international test score comparisons, teachers' epistemological beliefs about learning, and teachers' content pedagogical beliefs about subject matter. I will return to these issues of expectations and standards later in discussing recent research on subject matter teaching.

Student Motivation

In studying motivation in education, I have tried to highlight areas that I think need more attention and to note ways in which general motivational principles need to be qualified or contextualized for implementation in classrooms. I have noted, for example, that teacher praise is not always experienced, and often is not even intended as reinforcement; and I have devel-

Table 1. Guidelines for Effective Praise

Effective Praise	Ineffective Praise
1. Is delivered contingently.	1. Is delivered randomly or unsystematically.
2. Specifies the particulars of the accomplishment.	2. Is restricted to global positive reactions.
3. Shows spontaneity, variety, and other signs of credibility; suggests clear attention to the student's accomplishment.	3. Shows a bland uniformity that suggests a conditioned response made with minimal attention.
4. Rewards attainment of specified performance criteria (which can include effort criteria, however).	4. Rewards mere participation, without consideration of performance processes or outcomes.
5. Provides information to students about their competence or the value of their accomplishments.	5. Provides no information at all or gives students information about their status.
6. Orients students toward better appreciation of their own task-related behavior and thinking about problem solving.	6. Orients students toward comparing themselves with others and thinking about competing.
7. Uses student's own prior accomplishments as the context for describing present accomplishments.	7. Uses the accomplishments of peers as the context for describing student's present accomplishments.
8. Is given in recognition of noteworthy effort or success at difficult (for this student) tasks.	8. Is given without regard to the effort expended or the meaning of the accomplishment.
9. Attributes success to effort and ability, implying that similar success can be expected in the future.	9. Attributes success to ability alone or to external factors, such as luck or (easy) task difficulty.
10. Fosters endogenous attributions (students believe that they expend effort on the tasks because they enjoy the task and/or want to develop task-relevant skills).	10. Fosters exogenous attributions (Students believe that they expended effort on the task for external reasons--to please the teacher, win a competition or reward, etc.).
11. Focuses students' attention on their own task-relevant behavior.	11. Focuses students' attention on the teacher as an external authority figure who is manipulating them.
12. Fosters appreciation of, and desirable attributions about, task-relevant behavior after the process is completed.	12. Intrudes into the ongoing process, distracting attention from task-relevant behavior.

Source: Brophy, J. (1981). Teacher praise: A functional analysis. *Review of Educational Research*, 51, 5-32. Reprinted with permission of the American Educational Research Association.

oped research-based guidelines for praising effectively (Table 1). Using the expectancy-value model as a theoretical base, I also have emphasized that we need attention to the value aspects of motivation, not just its expectancy aspects. This point is summed up in the title of a recent article: "I know I can do this, but where is my motivation?" To be motivated to do something, we need good reasons for doing it, not just confidence that we can do it successfully if we try.

Researchers concerned with motivation in education have not paid enough attention to strategies for motivating students to engage in learning activities eagerly, or at least willingly. Further, many who have addressed this issue have done so by calling for teachers to emphasize either extrinsic or intrinsic motivation strategies. I do not believe that either of these two general approaches is capable of stimulating students' motivation to learn school subjects in classroom settings. Offering rewards for good performance can stimulate achievement striving, at least among students who value the rewards and believe that they can reach the necessary performance levels if they put forth reasonable effort. However, extrinsic rewards appear to be more effective for stimulating brute-force learning efforts (rote learning, skills practice) than for stimulating the more reflective cognitive and metacognitive processes that yield understanding, appreciation, and the disposition to apply subject-matter content.

Intrinsic motivation approaches, with their emphasis on student choice and enjoyment, seem more promising, at least at first. However, the potential for using intrinsic motivation strategies in the classroom is quite limited. School is not a day camp where we send children to pursue recreational activities of their own choosing in whatever fashion suits them. Instead, it is a place that we send them to master a curriculum designed to prepare them for adult roles in our society. Most of their time is spent in activities that they would not choose to engage in on their own. Furthermore, their participation in these activities requires concentration and effort, and it results in teacher evaluation and report-card grades.

I believe that as educational researchers we need to accept these realities as boundary conditions and frame our efforts to develop motivational strategies within them, rather than trying to ignore or dream them away with Utopian visions of schooling. We can begin by reducing emphasis on strategies for controlling behavior through extrinsic rewards or capitalizing on intrinsic motivation by trying to make learning fun. Instead, we can begin to emphasize strategies for motivating students to learn by engaging their interest and developing their appreciation for the value of accomplishing learning goals. These strategies imply that learning should be worthwhile, meaningful, and goal-oriented, but not fun in the usual sense of the word (see Section E of Table 2).

I view the readiness to engage in academic activities with motivation to learn as a schema—a network of connected insights, skills, values, and dispositions that enable students understand what it means to engage in academic activities with the intention of accomplishing their learning goals and

Table 2. Essential Preconditions for Motivating Students and Form Sets of Motivational Strategies

A. Essential Preconditions
- 1. Supportive environment
- 2. Appropriate level of challenge/difficulty
- 3. Meaningful learning objectives
- 4. Moderation/optimal use of strategies

B. Motivating by Maintaining Success Expectations
- 5. Program for success
- 6. Teach goal setting, performance appraisal, and self-reinforcement
- 7. Provide remedial socialization for discouraged students
  - a. Portray effort as investment rather than risk
  - b. Portray skill development as incremental and domain specific
  - c. Focus on mastery
  - d. Provide attribution retraining
  - e. Miminize test anxiety

C. Motivating by Supplying Extrinsic Incentives
- 8. Offer rewards as incentives for good (or improved) performance
- 9. Structure appropriate competition
- 10. Call attention to the instrumental value of academic activities

D. Motivating by Capitalizing on Students' Existing Instrinsic Motivation
- 11. Adapt tasks to students' interests
  - a. Incorporate content that students find interesting or activities that they find enjoyable
  - b. Offer choices of alternative tasks or opprtunities to exercise autonomy in selecting among alternative ways to meet requirements
  - c. Encourage student comments and questions
  - d. Include divergent questions and oppportunities for students to express opinions or make other responses to the content
- 12. Plan for novelty and variety
- 13. Provide opportunities to respond actively
- 14. Provide immediate feedback to student responses
- 15. Allow students to create finished products
- 16. Incorporate "fun features" into academic activities
  - a. Fantasy or imagination elements
  - b. Simulation exercises
  - c. Gamelike features
  - d. Peer interaction opportunities

E. Strategies for Stimulating Student Motivation to Learn
- 17. Model interest in learning and motivation to learn
- 18. Communicate desirable expectations and attributions about students' motivation to learn
- 19. Minimize students' performance anxiety during learning activities
- 20. Project intensity
- 21. Project enthusiasm
- 22. Induce task interest or appreciation
- 23. Induce curiosity or suspense
- 24. Induce dissonance or cognitive conflict
- 25. Make abstract content more personal, concrete, or familiar
- 26. Induce students to generate their own motivation to learn
- 27. State learning objectives and provide advance organizers
- 28. Model task-related thinking and problem solving

Source. Reprinted with permission from Brophy, J. (1987). Synthesis of Research on Strategies for Motivating Students to Learn. *Educational Leadership*, 45(2), 40-48. Copyright by ASCD.

with metacognitive awareness of the strategies used in attempting to do so. The total schema cannot be taught directly, although some of its conceptual and skills components can. In addition, its value and dispositional components can be stimulated and reinforced through teacher modeling, communication of expectations, and socialization of students into a cohesive learning community. My writings on strategies for motivating students to learn reflect this orientation.

Classroom Management

Classroom management is one of the most successfully researched aspects of teaching. Investigators using a variety of methods in different parts of the country all have found that teachers who approach management as a process of establishing an effective learning environment tend to be more successful than teachers who emphasize their roles as disciplinarians. Successful managers are clear and consistent in articulating their expectations. They model or provide direct instruction in desired procedures if necessary, and they provide cues and reminders when these procedures are needed. They keep students engaged in worthwhile lessons and activities; they monitor the classroom continually and respond to emerging problems before they become disruptive; and when possible they intervene in ways that do not disrupt lesson momentum or distract students who are working on assignments. Their classroom management activities support their instructional systems.

These principles that emerged from 1970s and 1980s research seem just as applicable to currently emphasized social constructivist approaches to teaching as they are to earlier-emphasized transmission approaches, but the particulars of implementation need to be adjusted. Students of constructivist teachers will need direction and assistance concerning their participation in active discussion, not just recitation, and also their participation in collaborative learning in pairs and small groups, not just working alone on seatwork assignments.

In summary, I think that the basic principles of good management are now well understood and empirically validated, although thoughtful analysis will be needed to determine how to apply them to emerging instructional innovations. This can be done by determining what students will need to do in order to engage optimally in an innovative learning format, then working backwards from this goal to determine what forms of managerial instruction or assistance may be needed.

Process-Outcome Research

A productive approach that became prominent in the 1970s was research designed to identify relationships between classroom processes and student outcomes. Two forms of *process-outcome research* were school effects research and teacher effects research. *School effects research* identified characteristics observed consistently in schools that elicit good achievement gains, notably strong academic leadership, a safe and orderly school climate, positive teacher attitudes toward students and expectations regarding their abilities to master the curriculum, careful monitoring of progress through student testing and staff evaluation programs, and strong parent involvement programs.

Teacher effects research identified teacher behaviors and teacher-student interaction patterns associated with student achievement gains. Along with a great many more specific elaborations, this research firmly established three major conclusions about teacher effects on student achievement.

1. *Teachers make a difference.* Some teachers reliably elicit greater gains than others, because of differences in how they teach.

2. *Differences in achievement gains occur in part because of differences in exposure to academic content and opportunity to learn.* Teachers who elicit greater gains: (1) emphasize developing mastery of the curriculum in establishing expectations for students and defining their own roles as teachers; (2) allocate most of the available time for activities designed to foster such mastery; and (3) are effective managers who keep their students engaged in ongoing academic activities.

3. *Teachers who elicit greater achievement gains do not merely maximize "time on task;" in addition, they spend a great deal of time actively instructing their students.* They spend more time in interactive lessons and less time in independent seatwork. Rather than depend solely on curriculum materials as content sources, they interpret and elaborate the content for their students, stimulate them to react to it during recitation and discussion activities, and circulate during seatwork times to monitor progress and provide assistance when needed. They are active instructors, although most of their instruction occurs during interactive discourse with students rather than during extended lecture presentations.

The process-outcome research of the 1970s was important because it contributed the findings just summarized and because it began to provide education with a knowledge base capable of moving the field beyond testimonials and unsupported claims toward scientific statements based on credible data. However, this research was limited in certain respects. First, it focused on important but very basic aspects of teaching. These aspects differentiate the least effective teachers from other teachers, but they do not include the more subtle and finer points that distinguish the most outstanding teachers. Also, most of this research relied on standardized tests as the outcome measure, which meant that it assessed mastery of relatively isolated knowledge items and skill components, but not the degree to which students had developed understanding of networks of knowledge that they could use in authentic applications.

Research on Teaching for Understanding and Use of Knowledge

During the 1980s a newer kind of research emerged that emphasized teaching subject matter for understanding and use of knowledge. This research focuses on particular curriculum units or even individual lessons, taking into account the instructional goals and assessing learning accordingly. The researchers establish what the teacher is trying to accomplish, record detailed information about classroom processes as they unfold during the lesson or unit, and then assess learning using evaluation measures keyed to the instructional goals. Often these include detailed interviews or portfolio assessments, not just conventional short-answer tests.

This research has reinforced and elaborated on find-

ings indicating that teachers play a vital role in stimulating student learning, but it also has focused on the role of the student. It recognizes that students do not merely receive or copy input from teachers. Instead, they actively mediate it by trying to make sense of it and relate it to what they already know (or think they know) about the topic. Thus, students develop new knowledge through a process of *active construction*. To get beyond rote memorizing and achieve true understanding, they need to develop and integrate a network of associations linking new input to pre-existing knowledge anchored in concrete experience. This means that teaching involves inducing *conceptual change* in students, not infusing knowledge into a vacuum. When students' preexisting beliefs about a topic are accurate, they facilitate learning and provide a natural starting place for teaching. If the students also harbor misconceptions, however, these misconceptions will need to be corrected so that they do not persist and distort the new learning.

To the extent that new learning is complex, the construction of meaning required to develop clear understanding of it will take time and will be facilitated by interactive discourse. Clear explanations and modeling from the teacher are important, but so are opportunities to answer questions about the content, discuss or debate its meanings and implications, or apply it in authentic problem-solving or decision-making contexts. These activities allow students to process the content actively and "make it their own" by paraphrasing it into their own words, exploring its relationships to other knowledge and to past experience, appreciating the insights it provides, or identifying its implications for personal decision-making or action. Increasingly, research is pointing to thoughtful discussion, and not just teacher lecturing or student recitation, as characteristic of the classroom discourse involved in teaching for understanding.

Researchers have also begun to stress the complementary changes in teacher and student roles that should occur as learning progresses. Early in the process, the teacher assumes most of the responsibility for structuring and managing learning activities and provides students with a great deal of information, explanation, modeling, and cueing. As students develop expertise, however, they can begin regulating their own learning by asking questions and by working on increasingly complex applications with increasing degrees of autonomy. The teacher still provides task simplification, coaching, and other "scaffolding" needed to assist students with challenges that they are not yet ready to handle on their own, but this assistance is gradually reduced in response to gradual increases in student readiness for independent and self-regulated learning.

Research on teaching school subjects for understanding and use of knowledge is still in its infancy, but it already has produced successful experimental programs in most subjects. Even more encouraging, analyses of these programs have identified a set of principles and practices that are common to most if not all of them. These common elements, which might be considered components in a model of good subject-matter teaching, include the following:

1. The curriculum is designed to equip students with knowledge, skills, values, and dispositions that they will find useful both inside and outside of school.
2. Instructional goals emphasize developing student expertise within an application context and with emphasis on conceptual understanding of knowledge and self-regulated application of skills.
3. The curriculum balances breadth with depth by addressing limited content but developing this content sufficiently to foster conceptual understanding.
4. The content is organized around a limited set of powerful ideas (basic understandings and principles).
5. The teacher's role is not just to present information but also to scaffold and respond to students' learning efforts.
6. The students' role is not just to absorb or copy input but also to actively make sense and construct meaning.
7. Students' prior knowledge about the topic is elicited and used as a starting place for instruction, which builds on accurate prior knowledge and stimulates conceptual change if necessary.
8. Activities and assignments feature tasks that call for problem solving or critical thinking, not just memory or reproduction.
9. Higher order thinking skills are not taught as a separate skills curriculum. Instead, they are developed in the process of teaching subject-matter knowledge within application contexts that call for students to relate what they are learning to their lives outside of school by thinking critically or creatively about it or by using it to solve problems or make decisions.
10. The teacher creates a social environment in the classroom that could be described as a learning community featuring discourse or dialogue designed to promote understanding.

Qualifications on Recent Findings

It is gratifying to see a convergence of findings that fit well with one another and replicate across grade levels and subject areas. This bodes well for the prospects of developing an empirically grounded theory of classroom teaching to serve as a basis for teacher education. However, enthusiasm for these recent findings needs to be tempered by some important cautions and qualifications.

First, the research base supporting these ideas is still quite thin, especially if you look for studies that include both comparison groups and systematic measurement of student outcomes. Several studies in mathematics have shown that treatments based on these principles increased students' attainment of higher-order outcomes without reducing their performance on lower-order outcomes, compared to students taught more traditionally. Also, some work in language arts and science has shown that experimental programs increased attainment of the program's primary goals, although these studies usually did not contain comparison groups or attempts to assess the trade-offs involved in replacing the earlier program

with the newer one. Some of the best known and most widely respected innovations, such as the KEEP program and reciprocal teaching, have produced mixed rather than uniformly positive results. Others, such as Magdalene Lampert's work in mathematics, have yet to produce any systematic evidence of effects on student outcomes.

I would be less concerned about this paucity of attention to student outcomes if I thought it was just a temporary problem soon to be eliminated through an abundance of data. Unfortunately, I see little evidence of this except among some of those concerned with program evaluation, teacher or school effects, or teaching school subjects for understanding and use of knowledge. Worse, I find that the current zeitgeist in education features unscientific, and occasionally antiscientific, attitudes. Too often, the effectiveness of advocated practices is merely assumed rather than supported with empirical evidence. Some reform advocates, most notably several leaders in the whole-language movement, disavow any responsibility for systematically testing their ideas before foisting them on other people's children. I consider this attitude to be not merely unprofessional but immoral. Other advocates, especially some of the self-identified social constructivists, seem to think that their ideas can be validated merely by showing them to be consistent with the theorizing of John Dewey or Lev Vygotsky. I share their respect for Dewey and Vygotsky's theoretical contributions, but I also point out that both of these theorists have been dead for more than 40 years and neither engaged in systematic testing of educational programs.

Whole-language and social constructivism are just two innovations currently being advocated on the basis of strong theoretical commitments without much evidence of acceptance of responsibility to test these ideas scientifically. Similar advocacy is seen for eliminating tracking and grouping, breaking down subject-matter barriers in order to integrate the curriculum, school voucher plans and other proposals for wholesale changes in school organization and funding, the Holmes group approach and other proposals for wholesale changes in teacher education, and various schemes for teaching generic thinking skills, developing multiple intelligences, or matching students' learning styles. These and other zeitgeist ideas need to be assessed scientifically, with emphasis on clarifying their underlying theories and generating appropriate empirical data to assess the trade-offs involved in adopting them.

Research on teaching school subjects for understanding and use of knowledge suggests several such trade-offs. One is the depth versus breadth dilemma. For some time now, American curriculum guides have been expanding to accommodate more and more topics and skills. Textbooks have expanded too, but even so, much of the increase in breadth of topic coverage has been achieved at the expense of depth of development of key ideas. Recent research has shown the need to cut back on topic coverage and shift from curricula featuring parades of facts and skills exercises to sustained study of networks of connected content structured around powerful ideas. But what is the optimal balance? How much do students need to know about a topic, and how long should the teacher persist in efforts to make sure that all students in the class master this network of knowledge? It may take weeks or even months to develop connected understandings of a topic such as photosynthesis, and even then some students will still be vague or confused. If we really want to teach for understanding and use of knowledge, we will have to reduce breadth of topic coverage drastically. Are we ready for middle-school science courses that address only four or five topics across the entire school year? If not, what would be a reasonable compromise between this level of depth emphasis and the overemphasis on breadth that we have now? Also, how would we decide which topics to retain in the curriculum and which to exclude?

These questions illustrate how, even as research on teaching for understanding and use of knowledge has generated increasing consensus around instructional method issues, it has reopened basic curricular issues: What is worth teaching to K-12 students, and why? Like the process-outcome research that preceded it, this more recent research has finessed these issues rather than addressed them. Process-outcome research did it by using standardized tests as their criteria for learning, which embodied the limitations mentioned earlier. More recent research has finessed curricular issues by equating the teaching of K-12 school subjects with enculturation into the academic disciplines. Usually this is done only implicitly, although a few investigators have done it explicitly and defended their choice. I believe that this choice leads to problematic curricular decisions.

I have become sensitized to this issue through my involvement in social studies. Among educators associated with the major school subjects, social studies educators have been uniquely insistent on the importance of distinguishing between academic disciplines and school subjects. Leaders such as Shirley Engle have pointed out that an academic discipline is a community of inquiry that focuses on some particular content domain and generates increasingly differentiated and elaborated knowledge about it. The discipline focuses on expanding this specialized knowledge base, not on exploring its applications to everyday life or its connections with other forms of knowledge. In contrast, school subjects are collections of knowledge organized for instruction to K-12 students as preparation for everyday living and performance of adult roles in society. Although informed by the academic disciplines, school subjects are mechanisms for accomplishing citizen education, not generating disciplinary knowledge. Therefore, decisions about what ought to be included in the K-12 curriculum should be informed by deliberations about what constitutes basic knowledge that all citizens need to know. This knowledge should be consistent with disciplinary knowledge, but it should be selected, organized, and taught as citizen education, not as induction into an academic discipline.

When I view recent research from this perspective, I often find myself admiring the instructional methods illustrated but at the same time questioning the choice of content. Sometimes I question the content itself. In reading some of Lampert's reports, for example, I question the value of spending several lessons on topics such as prime numbers or engaging students in extended reasoning about arcane mathematical questions. From a disciplinary perspective, there is no problem here, because the students are engaged in doing mathematics, and all mathematics are more or less equally acceptable. From a citizen education standpoint, however, I question spending precious curriculum time on content that seems to be lacking in

application potential.

Sometimes I question not so much the content itself but the cost effectiveness of introducing it at a particular grade or seeking to develop it to sophisticated levels. When I read the conceptual change science work of Charles Anderson and Kathleen Roth, for example, I am impressed with their ingenuity in developing ways to teach complicated topics such as photosynthesis to middle-school students, but at the same time, I find myself questioning whether it is worth the time and trouble that it takes to do so. Perhaps the topic should be developed less completely, or even withheld until later grades.

As knowledge proliferates, the depth versus breadth dilemma and its underlying curricular issues concerning what content is most worth teaching will become both more important and more difficult to manage. These issues won't be solved by lengthening the school day or school year, or by looking to the disciplines, to assessment data, or to the Japanese for definitive answers. I recognize that they cannot be resolved through purely empirical methods because they involve value questions. However, curricular arguments always contain implied assumptions that can be tested empirically, such as readiness assumptions (that students at a given grade level are ready to learn particular content) or transfer assumptions (that mastery of such content will enable them to handle certain life situations effectively). It is important for us as educational researchers to begin to pay attention to these curricular issues, as well as to press for clarification and testing of the empirical claims embedded in the theory-based position advocacy that typifies the public discourse about education. One good place to start is to recognize that the school subjects and the academic disciplines are different entities with different purposes. Particular content does not necessarily belong in the K-12 curriculum just because it is currently of interest to one of the disciplines.

Another thing that I have come to appreciate through my involvement with social studies is that different kinds of knowledge are emphasized in different school subjects. The basic skills subjects emphasize procedural knowledge. They also include propositional knowledge, but this propositional knowledge is limited in scope and is taught in conjunction with procedural knowledge that is tightly linked to it. As my colleague Ralph Putnam has noted, it is difficult to consider knowledge about the mean without simultaneously thinking about the mathematical procedures involved in computing the mean. However, it is possible to teach procedures through isolated skills exercises, and scholars interested in basic skills subjects complain that all too often, this is exactly what happens. The curriculum becomes a series of fragmented skills exercises in which students use primarily rote learning methods to practice skills in isolation, without getting sufficient opportunities to use these skills within authentic application contexts or to learn related propositional knowledge that would embed the procedural knowledge within a context of meaning. These concerns have led to calls for more emphasis on comprehension and reader response in teaching reading, on authentic communication in teaching writing, and on problem solving in teaching mathematics.

The situation is different for subjects associated with the sciences, and especially the social sciences and humanities. These subjects feature a great deal of propositional knowledge but not that much subject-specific procedural knowledge. Furthermore, except for a few subareas such as map skills or laboratory procedures, the procedural knowledge taught within these subjects usually is not tightly linked to particular propositional knowledge. Students are not taught about the U.S. Constitution or the human body, for example, to prepare them to perform specific everyday tasks or to function effectively in particular life situations. Instead, they learn these subjects partly as general background knowledge that anyone literate in the current culture would be expected to know and partly as information that could inform thinking and decision making in a broad range of life-application situations (such as deciding how to vote in an election or to maintain one's own nutrition and health). In the humanities, some things are taught without any particular practical life applications in mind but with the intention of improving the learners' quality of life by broadening their purviews, developing their knowledge and appreciation of the human condition as it has evolved through time and exists today across cultures, and exposing them to ideas believed to have enduring heuristic value.

Scholars studying instruction in these subjects that feature a great deal of propositional knowledge are not so much concerned about mindless skills practice as about mindless memorization (followed by forgetting) of disconnected and often trivial information. They want these subjects taught in ways that will help students to appreciate their value and see their applications to life outside of school. They usually recommend developing powerful ideas in depth, which includes focusing questions and activities around these ideas and their applications to students' lives.

These considerations underscore the need for differentiated models of teaching that take into account the different conditions of learning that are presented by different school subjects or instructional situations. In this regard, many of the currently popular models of teaching and learning are badly in need of qualification concerning their spheres of application. For example, models that emphasize strategy instruction, situated learning, or modeling, coaching, and scaffolding appear to be much more suited to teaching basic skills subjects than the sciences, social studies, or humanities.

Social constructivist notions and conceptual change notions appear to have broader application potential, although with subject-matter differences in how important they are and how they are manifested in the classroom. These ideas are most applicable when it is possible to engage students in discussion of topics about which they have a great deal of prior knowledge, especially if this knowledge includes personal life experiences that students can reflect on as a basis for reasoning. Social constructivist and conceptual change notions are less applicable, however, when students are getting initial exposure to primarily new propositional knowledge, as when fifth graders are introduced to chronological treatment of U.S. history. In these situations it is often necessary to first establish a common base of information before attempting to engage students in forms of discourse that implicitly assume understanding of this

information. I believe that some social constructivists are being unrealistic, even romantic, in suggesting that teachers should routinely avoid transmitting knowledge and instead function only as discussion facilitators and scaffolders of learning in the zone of proximal development.

Recent Work in Social Studies

My recent work in social studies elaborates on some of the themes developed above and introduces a few new ones. Much of this research was done as part of the work of the Elementary Subjects Center at Michigan State, in which research teams used similar methods to address similar questions concerning effective teaching of elementary mathematics, science, social studies, literature, art and music.

One of the things we did was study commonly used instructional materials supplied by the major publishers and, where possible, compare these with more distinctive materials developed with an emphasis on teaching the subject for understanding and use of knowledge. Our analyses looked not only at content coverage in the student texts but also at the information about the program supplied in the teacher's manual, the suggested questions and activities, and the ancillary worksheets and tests. We tried to assess the enacted curriculum that would result if the teacher not only used the instructional materials but followed the teaching suggestions in the manual.

Our analyses revealed serious problems with these materials. The root problem was that their development was not consistently driven by major subject-matter purposes and goals. In social studies, for example, the materials typically gave lip service to the notion that citizen education is the transcendent goal of social studies, so that the subject should be organized as preparation for fulfilling one's social and civic roles in our society. Unfortunately, however, these major social education goals got lost in the shuffle as curriculum planners generated a scope and sequence and divided it into grade levels, units, and lessons. Analysis of lessons indicated that the ostensible purposes and goals did not functionally guide curriculum development and instructional planning.

Instead, the lessons apparently were developed by identifying the knowledge, skills, and values emphasized in state and district guidelines for each grade level and then covering them, especially those that were likely to be tested. When curriculum development focuses on content coverage, ultimate goals tend to fade into the background, as do many of the originally recognized connections and intended life applications of particular content items. Knowledge gets fragmented into disconnected bits that can be memorized but not easily learned with understanding or appreciation of their potential significance. Skills get taught and practiced in isolation from the knowledge content, not as tools for using the knowledge in authentic life applications. The curriculum becomes a parade of facts and isolated skills exercises to be memorized for tests, instead of a vehicle for helping students to understand and participate effectively in the social world.

For example, a grade level goal states that students should understand and appreciate that the roles and values of family members may differ according to the structure of the family, its circumstances, and its cultural setting. However, at the unit level, the goal statement simply mentions understanding that families differ in size and composition. This unit level goal makes no reference to concepts such as cultures and roles that are referred to in the higher level goal, or to values and dispositions such as multicultural appreciation. Unless the teacher has a coherent view of the purposes and goals of social studies, or unless the manual does an excellent job of keeping the teacher aware of how particular lessons fit within the big picture, the result is likely to be a version of social studies that is long on isolated practice of facts and skills but short on integration and application of social learning.

The manuals typically do little or nothing to provide such help to teachers. Often there is no basis for doing so because the content is inherently trite or is developed in ways that do not promote progress toward significant social education goals. Units on shelter convey the fact that people live in a great variety of homes, but usually say little about the reasons for this variety. Units on government mention titles (president, governor, mayor), places (Washington, state capitals), and symbols (flag, ballot box), but precious little else. In particular, they say little about the functions and services performed at different levels of government. Students learn that there are people called the mayor, the governor, and the president, but not much about what these people or their governments do. Given the triteness of the content, it is not surprising that the suggested questions and activities tend to be trite too. They focus on recitation and reinforcement of memory for specific facts. In the absence of powerful ideas capable of supporting authentic applications, what else could they do?

With my colleague Janet Alleman, I have been examining social studies instructional materials in considerable detail in order to identify examples of good and bad content coverage and related questions and activities. We have identified some additional problems with these materials besides those commonly discussed in the literature. One is inserted skills exercises that have little value in their own right and detract from the coherence of the curriculum by interrupting it to address skills that have nothing to do with the unit topic (e.g., a map skills exercise, using a schematic map of a fictional contemporary suburban neighborhood, inserted into the middle of a unit on Native American tribes). Another problem lies in the activities suggested as ways to integrate across subjects. Many of these have no value in any subject (e.g., alphabetizing the state capitals). Others have value for some other subject but lack social education value and thus should not be taking up social studies time.

Jan and I have developed guidelines for selecting and implementing activities (Table 3). These guidelines can be helpful in deciding which suggested questions and activities to retain, in developing substitutes for questions or activities that are not suitable, and in preparing to implement activities in ways that are likely to maximize their pedagogical value. Sometimes it is necessary to replace curriculum content as well, if powerful ideas capable of supporting authentic activities are lacking. Ultimately, what is needed is curriculum development guided by major subject- matter goals. Ideally, goals would be expressed as learner outcomes—the knowledge, skills, attitudes, values, and dispositions that one wishes to develop in students—and all curriculum planning and implementation decisions would be driven by these goals. As a result, all

Table 3. Principles for the Design, Selection, and Evaluation of Activities

A. **Primary Principles**. These are necessary criteria that must be applied to each individual activity.

- A1. **Goal Relevance**. Activities must be useful means of accomplishing worthwhile curricular goals (phrased in terms of target capabilities or dispositions to be developed in students).
- A2. **Appropriate Level of Difficulty**. As implemented (i.e., taking into account not onle the activity itself but also the degree of scaffolding provided by the teacher), each activity must be pitched within the optimal range of difficulty (i.e., the students' zones of proximal development).
- A3. **Feasibility**. Activities must be feasible for implementation within the constraints under which the teacher must work.
- A4. **Cost Effectiveness**. The social education benefits expected to be derived from the activity must justify its anticipated costs (for both the teacher and students).

B. **Secondary Principles**. These principles identify features of activities that are desirable but not strictly necessary. Each individual activity should embody all the primary principles and as many of the secondary principles as can be incorporated in ways that are consistent with the primary principles.

- B1. **Multiple Goals**. An activity that simultaneously accomplishes many goals is preferable to one that accomplishes fewer goals (so long as it is just as effective in accomplishing the primary goal).
- B2. **Motivational value**. Other things being equal, activities that students are likely to enjoy (or at least find meaningful and worthwhile) are preferable to activities that students are not likely to enjoy.
- B3. **Topic Currency**. Activities that are constructed around currently or recently taught powerful ideas and that cohere as a set and build toward major goals are preferable to "orphan" activities that are constructed around isolated content.
- B4. **Whole-task Completion**. Oppportunities to complete whole tasks are preferable to isolated practice of part-skills, matching of words to definitions, ot other work that does not cohere and result in closure as completion of a meaningful task.
- B5. **Higher Order Thinking**. The best activities challenge students, not just to locate and reproduce information but to respond to a question or problem that cannot be resolved through routine applicaion of previously learned knowledge.
- B6. **Adaptability**. Activities that can be adapted to accomodate students' individual differences in interest or abilities are preferable to activities that cannot.

C. **Principles That Apply To Sets Of Activities**. The principles in A and B apply to each activity considered individually. In contrast, the principles in C apply to sets of activities developed as part of the plan for accomplishing the goals of the unit or curriculum strand. Each principle might not apply to each separate activity in the set, but the set as a whole should reflect the principles (insofar as it is possiblle to do while still meeting the primary goals).

- C1. **Variety**. The set should contain a variety of activity formats and student response modes.
- C2. **Progressive Levels Of Difficulty Or Complexity**. Activities should progressively increase in levels of challenge as student expertise develops.
- C3. **Life Applications**. Students should get to apply what they are learning to current events or other aspects of their lives outside of school (in ways that make sense, given their levels of development).
- C4. **Full Range of Goals Addressed**. As a set, the activities should reflect the full range of goals identified for the unit or strand.
- C5. **Concrete Experiences**. Where students lack sufficient experiential knowledge to support understanding, sets of activities should include opportunities for them to view demonstrations, inspect realia or photos, visit sites, or in other ways experience concrete examples of the content.
- C6. **Connecting Declarative Knowledge With Procedural Knowledge**. To the extent that doing so is important as part of developing basic understanding of a topic, students should learn relevant processes and procedural knowledge, not just declarative or factual knowledge.
- C7. **"Natural" Application**. Activities that are "naturals" for developing understanding of certain content should be included in the set for the unit. For example, retrieval charts and related comparison/contrast methods should be used whenever the content has focused on different examples or cases of concepts or generalizations (e.g., Native American tribes).

E. **Implementation Principles**. These principles refer to the ways that activities are implemented and, in particular, the ways that teachers structure and scaffold the activities for their students.

- E1. **Completeness**. A complete activity ordinarily would include the following stage: (a) introduction, (b) initial scaffolding, (c) independent work, and (d) debriefing/reflection/assessment.
- E2. **Introduction**. If students are to get the intended learning benefits from engaging in an activity, they will need to understand its intended purposes and what these imply about how they should respond to the activity.
- E3. **Initial Scaffolding**. Before releasing students to work mostly independently, teachers should provide whatever explicit explanation and modeling that the students may need in order to understand what to do, how to do it, and why it is important.
- E4. **Independent Work**. Once students have been released to work mostly independently, the teacher should monitor their efforts and provide any additional scaffolding or responsive elaboration on the instructions that may be needed to structure or simplify the task, clear up confusion or misconceptions, or help students to diagnose and develop repair strategies when they have made a mistake or used an inappropriate strategy.
- E5. **Feedback**. Activities should be planned so that the students will get feedback about their performance not only in the form of information about the correctness of responses but also in the form of diagnosis of the reason for the errors and explanation of how these errors may be corrected or how general qualitative aspects of performance may be improved.
- E6. **Debriefing/Reflection/Assessment**. Activities should be brought to closure in ways that link them back to their intended goals and purposes.
- E7. **Optimal Format**. Where alternatives are possible, the activity should be implemented in whatever format will maximize the time the students spend in active and thoughtful cognitive engagement.
- E8. **Optimal Use Of Instructional Time**. If the independent work phase of the activity calls for forms of work that are time consuming but do not require close teacher monitoring, these aspects of the work can be done outside the time allocated for social studies instruction.

Source: Adapted from J. Brophy and J. Allemen (1991). Activities as Instructional Tools: A Framework for Analysis and Evaluation. *Educational Rsearcher*, 20(4), 9-23. Reprinted with permission of the American Educational Research Association.

elements selected—the basic content, the ways that this content is represented and explicated to students, the questions asked, the types of teacher-student and student-student discourse that occur, the activities and assignments, and the methods used to assess progress and grade performance—would be included because they were believed necessary for moving students toward accomplishment of the major goals.

Jan and I are currently planning to develop and test goals-

driven and coherent units of instruction in elementary social studies, using methods similar to those used by Anderson and Roth in science. Part of the preparation for this has involved interviewing students before and after their social studies units to determine the nature of their prior knowledge, to document changes in response to instruction, and to identify commonly occurring naive conceptions or misconceptions that may need to be addressed. So far, these analyses have been developed most fully with respect to fifth-graders' ideas about U.S. history, studied in collaboration with Bruce VanSledright.

We have found that most fifth graders know that history has to do with the past, although many of them think that it is limited to the exploits of famous or important people or to events that occurred long ago, not realizing that history includes the recent past and the lives of everyday people. Many students initially confused history with archaeology. Other than interviewing living witnesses, they did not know much about ways to discover information about the past except for digging up bones and other material found underground. They did not realize that a variety of written records extending back for thousands of years is available to historians.

Some of their misconceptions involved overgeneralization of specific examples (all American Indians lived in tepees and hunted buffalo; colonies were small villages surrounded by wooden stockades). Others simply repeated inaccuracies commonly included in stories told to children (everyone but Columbus thought that the earth was flat). Still others included elements generated by the children themselves in an attempt to make sense of these stories and fill in the explanatory gaps in them. For example, instead of saying that the Pilgrims landed "at" Plymouth Rock, several children said that they landed "on" Plymouth Rock. Follow-up questioning indicated that some of these children believed that the Pilgrims settled at Plymouth because they literally sailed into Plymouth Rock and had to stop there because their ship was damaged. Similarly, when asked why people came to the New World, several students suggested that Europe was getting too crowded. Other misconceptions were related to the use of children's literature, as in the case of students who listed Johnny Tremaine as a signer of the Declaration of Independence and Louisa May Alcott as a female participant in the Revolution.

Some students declined to speculate when they realized that their knowledge was limited, but others concocted imaginative elaborations in their attempts to generate coherent stories based on the limited historical information that they possessed. Our favorite informant was interviewed initially as a fourth grader about American history topics she would study the following year. She told us that although Columbus gets credit for discovering America, when he reached it he found that it was already owned by Amerigo, who was "a pirate or something" who had gotten here two years previously and decided to name the place after himself. She had reconstructed this narrative based on information retained from viewing an episode of the "Chipmunks" TV show in which Simon and Alvin were helping Theodore prepare for a history test. This girl also reported that the Pilgrims had settled at Plymouth Rock, which she located somewhere in the Upper Peninsula of Michigan, and that their boat was called the Mayflower, which is how we got the saying "April showers bring May flowers." The Pilgrims had come to the New World because "their own world was getting wrecked by something. Someone was like trashing it. They were ruining their world and they had to find a new one." The first winter was rough because the people did not know how to survive in the New World and "They had just one little loaf of bread and it had to last them all winter. Then the Indians brought them food when the spring came for Thanksgiving and that's how we got Thanksgiving. They had turkey and stuffing."

It's fun to report these more fanciful narratives, and it's interesting to learn about where students get their ideas about social studies topics before studying them in school. The basic scientific purpose of this line of work, however, is to identify general developmental trends in students' social learning that can be incorporated within powerful approaches to elementary social studies curriculum and instruction. In the coming years, our research will trace developments in students' knowledge of universal needs and experiences such as food, clothing, shelter, families, communities, work, transportation, and communication, and then follow up by developing and assessing social studies units on these topics. These units will be structured around powerful ideas and informed by the disciplines of history, geography, and the social sciences. However, unit content will be selected and organized primarily to accomplish citizenship preparation, not induction into these disciplines, and instruction and assessment will be designed accordingly.

Conclusion

Educational research has begun to establish a knowedge base capable of informing instructional planning and assessment, although the information it has generated needs to be synthesized accurately and applied with recognition of its limitations. Different school subjects and instructional goals create different conditions of learning, which in turn call for different approaches to instruction. Few if any specific teacher *behaviors* are optimal for all teaching situations, although certain more general *principles* have broad if not universal applicability if adapted to the instructional goals (e.g., positive expectations, "with-it-ness", teaching networks of knowledge structured around powerful ideas, encouraging students to construct knowledge by encoding new input into their own words and connecting it to their prior knowledge). Recent research has produced consensus about the value of discourse-based instructional methods, but it also has finessed basic curricular issues (What is most worth teaching in K-12 education, and why?). The validity and applicability of proposed reforms in education cannot be established by appeals to theory or even to the academic disciplines. Instead, they need to be argued using a combination of (1) systematic explication of the advocates' goal priorities and assumptions about what kinds of curriculum content and instructional methods will be required to enable students to accomplish those goals; and (2) emprical evidence that the advocated program is feasible for the classroom implementation, that its assumptions are valid (it accomplishes its goals), and that its implementation yields acceptable trade-offs compared to those offered by recognized alternatives. My current work in social studies is an attempt to move in these directions.

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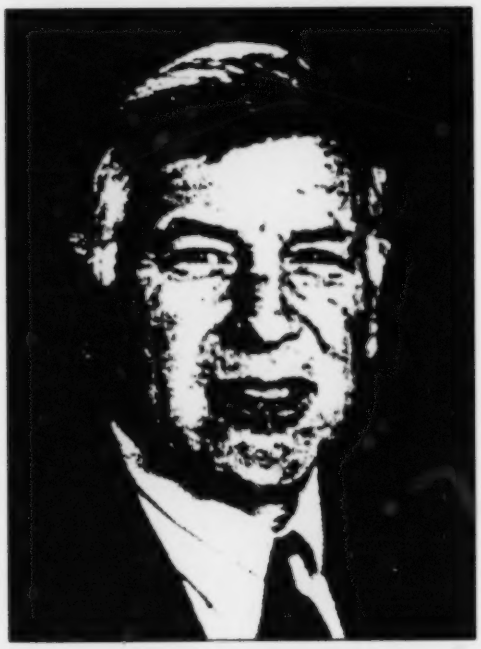
A Special Tribute to *MWERA*'s First President



Edward M. Griffin
1934-1993

We are sad to learn that Ed Griffin passed away very unexpectedly shortlyafter the 1993 AERA Conference in Atlanta. Ed was a charter member of MWERA, served as Co-chair with Sam Mayo of the Planning Group instrumental in establishing MWERA in 1978, and became our First President in 1979.

Ed continued to be active with MWERA and AERA over the years. He came to many of our Annual Meetings and was a source of vitality and encouragement at our Past-President receptions. His most recent pet project was AERA/SIG: State and Regional Educational Research Associations (SRERA), where he held the important position of Database Project Chair. The SRERA News notes that "In Atlanta, Ed surprised many of us by talking about early retirement. He seemed too young for that kind of talk, too young in his looks and in his youthful vitality."

Ed is survived by his wife and two children. To them and to his colleagues at Ferris State University, we extend our deepest sympathies.

502

Voices In Education

edited by
Marlene Schommer,
Winchita State University

Gregory J. Marchant asked leaders in education to respond to the question:

What need(s) do you see in doctorate programs in education?

Research internships. Paid assistantships.

-David Berliner, Arizona State University

There are many. One of the most crucial is the lack of time for advising students. When one has too many advisees, one cannot possibly give to students the academic care each needs nor the personal attention.

-Jeanne Chall, Harvard University

Early and authentic involvement in educational research projects and programs by all doctoral students, as a real context for making sense of readings, coursework, etc. in substance and methods of inquiry.

-Christopher Clark, Michigan State University

Better, more focussed and more rigorous, research training. Coursework, experience, and direct training in college teaching.

-Lyn Corno, Teachers College Columbia University

More emphasis on critical thinking and creative problem-solving.

-Edward Deci, University of Rochester

1. A much sharper distinction between the Doctor of Education and the Ph. D. degrees.

2. A clear orientation of the Doctor of Education degree toward educational missions and the requirements they make for top- level practitioners.

-John Goodlad, University of Washington

A richer involvement in the intellectual and aesthetic life of the culture. A much wider social vision and commitment to the education of an "articulate public".

-Maxine Greene, Teachers College Columbia University

Programs differ so I can only speak for the ones I know. My primary concern is that Ph.D. programs sometimes stray so far from practice (schooling, teaching, learning) that students become distanced from that practice and even see it as somehow unimportant. In terms of the curricula of doctoral programs, they are often lacking in intellectual coherence (I don't mean uniformity) and students' understandings emerge as fragments of information rather than conceptualizations of importance.

-Gary Griffin, University of Arizona

Educational doctoral programs should be somewhat less focused on customary educational content fields, e.g. curriculum or social foundations, and aimed more directly at preparing the types of specialists currently needed in education.

-W. James Popham, IOX Assessment Associates

Top quality students are badly needed for doctorate programs in education. Better financial support for doctoral students would help fill this need. I would also like to see increased opportunities for research internships with publishing faculty for all students in education doctorate programs.

-Andrew Porter, University of Wisconsin-Madison

Fewer numbers. Higher quality. Less ideology. More scholarship. Less psychology. More humanities.

-Kevin Ryan, Boston University

A major need of today is to prepare students to enter the field that is changing constantly, to adapt to society's demands and the need for programs to address the research and practical issues related to the politics of race and gender.

-Jane Stallings, Texas A&M University

As we seek to educate every student we find many problems not yet solved. A good doctoral program gives training in problem-solving.

-Ralph Tyler, Center for Advanced Study in Behavioral Sciences

Broad knowledge of major fields of education plus a deep mastery of chosen specialty. Writing, computing, presentation skills and disciplined effort for 60 to 80 hours per week.

-Herbert Walberg,University of Illinois-Chicago

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Volume 7, No 2 Spring 1994

MID-WESTERN EDUCATIONAL RESEARCHER

●Official Publication of the Mid-Western Educational Research Association●

College of Education, The Ohio State University

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505

IN THIS ISSUE

This issue of the journal has something for everyone! Three very different articles represent the range of interests in the Association. Fred Pigge and Ron Marso report on a study about attitude changes in preservice teachers; this study takes its place in the authors' ongoing research agenda about preservice teacher development. James Mead presents principles for developing and using large qualitative databases that come from his experiences with the National Center for Research on Teacher Education at Michigan State University. Orpha Duell gives advice to new faculty members about university hiring, promotion, and tenure processes.

Invited addresses from the October 1993 conference also speak to a range of interests. Rose Mary Scott and Joan S. Timm summarize Christine Sleeter's speech about multicultural education. Gregory Gerrick provides the text of his remarks on leadership in school restructuring. Ben Wright develops his theory of composition analysis, a new addition to the measurement toolbox. Marlene Schommer, the new editor of Voices, develops a new format to allow longer responses to questions. We will occasionally publish book reviews, and editor Ayres D'Costa does the first one. We hope these articles and features include something of interest to each of you, our members and readers.

This issue also contains Mid-Western Educational Research Association business. Of particular interest to members are the Conference highlights and a request for volunteers to be discussants and session chairs at the 1994 Annual Meeting.

Ayres D'Costa
Sue Brookhart
John Surber

ON THE COVER

The College of Education at The Ohio State University is widely acknowledged as a preeminent professional school of education, both in terms of the quality of its preparation programs for entry-level educators, education leaders and the education professoriate, and as an accomplished center for research and development initiatives. Hence, for decades it has received the highest rankings from its peers.

In 1974, *Change Magazine* reported college of education rankings, placing OSU's college in the top five, following only Stanford and Harvard, making this College the number one public college of education in the country. In the Forgan (1989) reputational study of colleges of education, OSU's College of Education ranked number one, tied with Michigan State University, in preparation programs for teachers and other practitioners, and in the top five for research efforts in education and services contributed to the profession and the community. In one of the most comprehensive rankings studies to date, conducted by West and Rhee (1993), and assessing institutions and departments on multiple variables, OSU's College of Education ranked third in the country on both productivity and program impact, and prestige. Further, across seven academic areas, it was in the top five in four of these and in the top 10 in two others.

Front Cover: Arps Hall, Sketched by Sandra Spangler, 1992

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Ayres G. D'Costa, *MWER* Editor
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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 7, No 2 Spring 1994

Relationships of Prospective Teachers' Personality Type and Locus of Control Orientation with Changes in Their Attitude and Anxiety about Teaching
Fred L. Pigge and Ronald N. Marso, Bowling Green State University
2

Some Issues in Constructing, Managing, and Using Large Qualitative Databases
James V. Mead, Michigan State University
8

Tenure and Promotion: Questions to Ask and Strategies for Success
Orpha K. Duell, Wichita State University
15

Mid-Western Educational Research Association Business Section
20

Excerpts From "An Analysis of the Critiques of Multicultural Education" by Christine Sleeter, Invited Speaker for MWERA Divisions B and G at the 1993 Conference
Rose Mary Scott, University of Wisconsin-Parkside and Joan S. Timm, University of Wisconsin-Oshkosh
24

The Responsibility of Higher Education In Providing Leadership In The Restructing And Renewal Of Public Schools: An Invited Address to the 1993 Conference
W. Gregory Gerrick, Ashland University
25

Composition Analysis
Benjamin D. Wright, University of Chicago
29

Sato, Takahiro (1987). Introduction To Educational Information Technology: A Book Review
Ayres D'Costa, The Ohio State University
37

Voices in Education
Marlene Schommer, Wichita State University
39

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Relationships of Prospective Teachers' Personality Type and Locus of Control Orientation with Changes in Their Attitude and Anxiety about Teaching

Fred L. Pigge and Ronald N. Marso, Bowling Green State University

This study was designed to investigate relationships between prospective teachers' Myers-Briggs' personality type and Rotter's feelings of locus of control and their attitude/anxiety about teaching as they progressed through their teacher preparation. A series of two-factor ANOVA's with repeated measurements on one factor revealed that as the teacher candidates progressed through their preparation program, anxiety decreased and attitude remained high and positive; that the introverted candidates expressed more anxiety and experienced less of a decrease in anxiety than the extroverts; that the candidates with a judging preference reported a more positive attitude about teaching than did their perceptive cohorts; and that the internally controlled candidates throughout their preparation generally reported less anxiety about teaching than did the candidates with average or high feelings of externality.

There is increasing research evidence that affective changes do occur in prospective teachers as they progress through preservice teacher preparation and that at least some of these changes follow predictable patterns within theoretical frameworks such as Fuller's (Fuller & Bown, 1975) developmental concerns model (e.g., Adams, Hutchinson, & Martray, 1980; Adams & Martray, 1981; Pigge & Marso, 1987; Silvernail & Costello, 1983). The results of these and similar studies, however, also have revealed perplexing inconsistencies in the specific nature of the influence of teacher education upon aspiring teachers. Efforts to study these inconsistencies have led to research findings which suggest that the personal characteristics of prospective teachers as well as the characteristics of the preservice education experience impinge upon their development as teachers (e.g., Marso & Pigge, 1989; Tabachnich & Zeichner, 1984; Villeme & Hall, 1980; Weinstock & Peccolo, 1970).

Byler and Byler (1984) found that a positive change in prospective teachers' morale during student teaching was related to the extent of prospective teachers' early field experience, to the expectations of student teachers in the assigned school setting, to the degree to which cooperating teachers accepted student teachers as fellow professionals, and to the level of their cooperating teachers' morale. McCaulley and Natter (1974) reported that individuals with different Myers-Briggs personality types are attracted to different grade levels and subject areas of teaching. And, Villeme and Hall (1980) found that prospective teachers' attitude toward teaching was influenced by their gender, anticipated teaching grade level, and selected teaching major.

Lawrence (1979) maintains that "ample" evidence exists which indicates that teachers' personality types do affect the way they teach and the way they prefer to teach, and considerable research has revealed relationships between teachers' locus of control and their classroom behavior and their pupils' achievement (Lefcourt, 1982). For example, Harpin (1980) and Harpin and Sandler (1979) reported a relationship between teachers' locus of control and the nature of their classroom control, and DeNovellis and Lawrence (1983) identified a relationship between teachers' Myers-Briggs personality type and the nature of their classroom control. Further, Guyton and DeMoulin (1989) reported that effective and ineffective inservice teachers differed in personality but not in age, years of teaching experience, gender, race, and academic degrees earned. Effective teachers, as opposed to ineffective teachers, were found to be more self-reliant, independent, dominant, assertive, competitive, resourceful, cheerful, and trusting and understanding of others but less respectful of school rules.

Other researchers (e.g., Parkay, Greenwood, Olejnik, & Proller [1988]; Sadowski, Blackwell, & Willard [1986]; McIntyre [1984]; Meadow ['981]) have identified relationships between teachers' behavior and their feelings of stress and locus of control. These researchers found that teachers reporting low levels of stress and feelings of internal locus of control had fewer classroom discipline problems, fewer intrapersonal conflicts, and better relations with superiors, colleagues, and parents of their pupils than did their more stressful and externally controlled colleagues.

Relatedly, Ashton, Webb, and Doda (1983) reported that teachers with feelings of self-efficacy and an internal locus of control accepted more personal responsibility for their pupils' success or failure. And, Murray and Staebler (1974) found that those teachers reporting a high internal as opposed to a high external locus of control had higher achieving pupils.

The purpose of the present study was to ascertain whether relationships existed between changes in prospective teachers' attitude and anxiety about teaching during

teacher preparation and their personality type, as measured by the Myers-Briggs Type Indicator, and their locus of control orientation, as measured by Rotter's External-Internal Locus of Control Scale. More specifically, answers to the following four questions were sought: 1) In an overall sense, will the prospective teachers reveal significant changes over time (from commencement to conclusion of their education) in their attitude and anxiety about teaching? 2) Will there be significant differences in the prospective teachers' anxiety and/or attitude scores when the teachers are classified by levels of their locus of control scores? 3) Will there be significant differences in the prospective teachers' anxiety and/or attitude scores when the teachers are classified by Myers-Briggs personality types? 4) Will there be significant interactions between locus of control levels and/or personality types and time in teacher education (commencement to conclusion of preparation) with respect to the prospective teachers' anxiety and attitude about teaching scores?

Method

The subjects of this investigation were composed of all students entering teacher preparation at a large teacher education institution, during the calendar year 1985, who had completed their student teaching experience at this same institution by the end of the spring semester of 1988. This sample consisted of 150 prospective teachers, of whom 126 were female, and of whom 56 anticipated teaching at the secondary level, 74 at the elementary grade level, and 20 were seeking K-12 certification.

Upon entrance to teacher education, and again upon the completion of the student teaching practicum, the subjects completed The Attitude Toward Teaching As A Career Scale (Merwin & DiVesta, 1959) and The Teaching Anxiety Scale (Parsons, 1973). In addition, each subject completed the Myers-Briggs Type Indicator (Myers & McCaulley, 1985) and Rotter's Internal-External Locus of Control (Rotter, 1966) just prior to the commencement of their student teaching experience.

The attitude scale contains 11 attitudinal statements about teaching as a career, each of which is responded to on a scale from strongly disagree (1) to strongly agree (6), where the higher scores indicate a more positive attitude. The anxiety scale is comprised of 29 items addressing feelings about various events associated with teaching, with a response continuum for each item from never (1) to always (5), with higher scores indicating more anxiety toward teaching as a career.

Five two-factor ANOVAs with repeated measurements on one factor (Time) were completed for each of the two dependent variables (Attitude and Anxiety). For each analysis, two measurement times during teacher preparation (upon the commencement of preparation and during student teaching) formed the ANOVA column heading [Time (within subjects) main effects]. For each dependent variable, the three locus of control and four sets of personality type classifications formed the five sets of ANOVA row headings [Type (between subjects) main effects]. Specifically, the row classifications were the Rotter externality scores classified as top, middle, and lowest one-thirds; and the Myers-Briggs' four dichotomous preference types: extroversion or introversion, sensing or intuitive, thinking or feeling, and judging or perceptive. These preference type classifications, rather than the more complex 16 combinations of types derived from these four dimensions, were used in accord with prior research practice as the frequency distribution of subjects within career field samples across the 16 types has proven to be far from equivalent (Myers & McCaulley, 1985). In the present moderately large sample of 150 prospective teachers, the distribution of subjects within the 16 types resulted in n's ≤ 5 for 9 of the 16 types.

Findings

Overview. A significant Time effect was found with regard to anxiety but not for attitude; attitude toward teaching tended to remain relatively high and stable throughout the training period, but scores from the teaching anxiety scale were significantly lower during student teaching than they were prior to teacher training. Locus of control levels were found to be related to the pre-post anxiety but not to the pre-post attitude measurements. Myers-Briggs' extrovert-introvert classifications were found to be related to changes in anxiety. Also, the students classified as judging were found to have a higher average attitude toward teaching than did those classified as perceptive.

Alpha Levels. The above overview of the major findings was based on individual test alphas of .05. Statistically conservative readers may desire to adjust this overall alpha of .05 downward to guard against making an overall experiment error that is likely to be somewhat greater than .05. In this regard, the original .05 level could be divided as Bonferroni suggested by 5, the number of repeated tests applied to each dependent variable to obtain a revised alpha of .01. These conservative readers would then, unlike the authors of the present study, demand p values of .01 or less before concluding the various F-ratio values presented in Tables 1 and 2 to be significant.

Affective change. Data presented in Tables 1 and 2 reveal that the prospective teachers' attitudes toward teaching remained relatively high and stable throughout the duration of their teacher training. Three non-significant F-ratios are presented which relate to the evaluation of possible changes in their attitude over time: $F = 0.98$, $p = .32$ (Table 1); $F = 0.36$, $p = .55$ (Table 2); and $F = 0.04$, $p = .84$ (Table 2).

In a similar manner, Tables 1 and 2 present two unambiguous F-ratios which indicate that prospective teachers' anxiety toward teaching significantly decreased over time: $F = 51.01$, $p < .0001$ (Table 1) and $F = 50.60$, $p < .0001$ (Table 2). The third main-effect related to anxiety over Time $F = 43.08$, $p < .0001$ (Table 2) is somewhat ambiguous because there was an interaction between the extro-

vert-introvert classifications and Time. Regardless, the two former F-ratios and accompanying probability values indicate quite clearly that the prospective teachers' anxiety scores significantly decreased between the commencement of teacher training and completion of the student teaching practicum.

Table 1

Main Effects and Interaction F's Related to Attitude and Anxiety Pre and Posttest Means Classified by Rotter's Locus of Control

Dependent Variable	Locus (Row) Effect					
	Externals		Middle		Internals	
	Pre	Post	Pre	P ost	Pre	Post
	(Average)		(Average)		(Average)	
Attitude						
	50.63	50.42	51.11	51.69	51.56	53.14
	(50.43)		(51.40)		(52.35)	
Anxiety						
	71.03	63.33	76.06	66.97	67.92	60.75
	(67.18) A,B**		(71.51)A		(64.33)B	

	Time (Column) Effect		Time	
	Pre	Post	F	p
Attitude				
	51.09	51.73	0.98	.32
Anxiety				
	71.62	63.65	51.01	.0001

	Locus		Locus X Time	
	F	p	F	p
Attitude				
	.99	.38	.63	.54
Anxiety				
	5.76	.004	.26	.77

**Total N for this analysis was 38 + 35 + 36, respectively by classification, or 109. Two small classes of the original 150 students were not administered the Rotter's instrument.*

***Means coded with the same letter do not differ significantly (Scheffé post-hoc pair-wise test, a = .05)*

Table 2

Main Effects and Interaction F's Related to Attitude and Anxiety Pre and Posttest Means Classified by Myers-Briggs E-I and J-P Type Classifications

Dependent Variable	Myers-Briggs Type (Row) Effect*					
	N	Pre (Average)	Post	N	Pre (Average)	Post
	Extrovert			Introvert		
Attitude	104	51.87 (52.01)	52.16	45	49.91 (50.13)	0.36
Anxiety	105	70.83 (66.40)	61.98	45	72.11 (69.89)	67.67

	Time (Column) Effect			Time	
	N	Pre	Post	F	p
Attitude	149	51.28	51.62	0.36	.55
Anxiety	150	71.21	63.69	43.08	.0001

	Type		Type X Time	
	F	p	F	p
Attitude	3.59	.06	0.01	.91
Anxiety	4.52	.035	4.73	.031

	Myers-Briggs Type (Row) Effect*					
	N	Pre (Ave.)	Post	N	Pre (Ave.)	Post
	Judging			Perceptive		
Attitude	109	51.86 (52.07)	52.28	41	49.68 (49.75)	49.83
Anxiety	110	71.09 (67.36)	63.63	40	71.55 (67.70)	63.85

	Time (Column) Effect			Time	
	N	Pre	Post	F	p
Attitude	150	51.28	51.62	0.04	.84
Anxiety	150	71.21	63.69	50.60	.0001

	Type		Type X Time	
	F	p	F	p
Attitude	5.14	.025	0.04	.84
Anxiety	0.04	.84	0.01	.91

**No significant Main Effect Type or Type X Time F-ratios were identified for the Myers-Briggs sensing/intuitive and thinking/feeling comparisons; thus data from these comparisons are omitted from this manuscript.*

Locus of Control. The external (X > 11), middle (X = 9 through 11), and internal locus of control (X < 9) approximate one-thirds classifications, derived from Rotter's locus of control, yielded significant combined mean differences F = 5.76, p = .004, (Table 1) for the prospective teachers' anxiety about teaching, but not for attitude about teaching. The Scheffé procedure for post-hoc pair-wise mean comparisons indicated that those prospective teachers with internal feelings of control reported less average anxiety about teaching (M = 64.33) than did those in the middle one-third (M = 71.51); whereas the aspiring teachers with high feelings of external control (M = 67.18) did not differ significantly in anxiety from either of the other two groups.

Regarding mean differences within each locus of control classification, the average of the pre and post anxiety standard deviations based on the total group (N = 150) was 10.93. Using this average standard deviation as a yardstick in much the same manner as a researcher would in computing effect sizes (Borg & Gall, 1989), the following findings emerge: 1) The externals' posttest mean when compared to their pretest mean was .70 of an average S.D. lower, for the mid group, the posttest mean was .83 of a standard deviation lower than the pretest mean, and for the internals it was .66. Thus, it may be concluded that each of the three groups had significantly and probably meaningfully lower posttest than pretest means. 2) Comparing just

pretest means it can be observed that the internals' mean (67.92) was .74 of an average S.D. lower than the pretest mean (76.06) of the middle group and .28 of an average S.D. less than the pretest mean (71.03) for the externals. Not only did the internals have the lowest pretest anxiety mean, they also had the lowest posttest mean.

Myers-Briggs Type. Analyses using the Myers-Briggs extrovert versus introvert classification revealed that the majority of this sample of aspiring teachers were extrovert types (70%). An interaction effect was revealed between the extrovert versus introvert classification and the two measurement points during training for the anxiety about teaching criterion measure $F = 4.73$, $p = .031$ (Table 2). The pattern of means for this interaction is depicted in Figure 1. The data presented in Figure 1 suggest that both the introverts and extroverts significantly reduced their anxiety toward teaching over time but that the extroverts experienced a significantly greater reduction in anxiety about teaching during the period of undergraduate teacher education than did their cohorts classified as introverts.

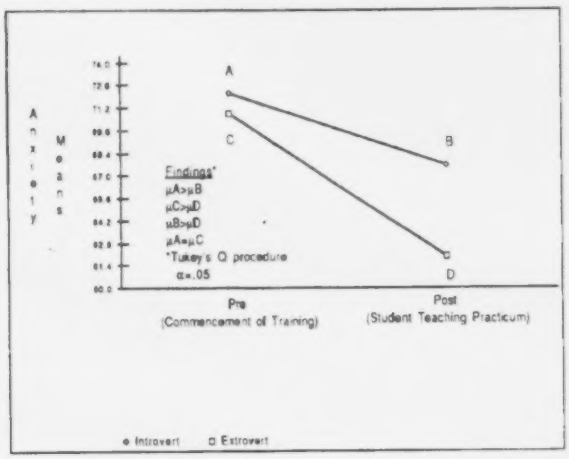

Figure 1. Plot of the Pre-Post Extrovert-Introvert Interaction for the Anxiety Scores

The prospective teachers classified as extroverts also appeared to express somewhat of a more positive attitude about teaching ($M = 52.01$) than did those classified as introverts ($M = 50.13$). It should be noted, however, that the average mean difference for this comparison just approached the selected test-wise statistical significance level $F = 3.59$, $p = .06$ (Table 2). Evaluatively, the average pre and post S.D. for the attitude scores ($N = 149$) was 6.57. This small attitude mean difference (1.88 points) is only 1.29 of a S.D., hardly enough to warrant further examination.

The judging (58%) versus perceptive (42%) classifications of the teacher candidates derived from the Myers-Briggs' instrument indicated that the judging ($M = 52.07$) candidates reported a more positive attitude toward teaching than did the perceptive ($M = 49.75$) candidates $F = 5.14$, $p = .025$ (Table 2). This Myers-Briggs' classification did not reveal a significant difference in anxiety mean scores.

Summary and Discussion

The prospective teachers reported a decrease in anxiety about teaching during teacher preparation, but their attitude toward teaching remained stable and positive between the commencement of teacher education and the student teaching practicum. More specific to the purpose of this study, the prospective teachers' attitude and anxiety about teaching were found to be related to their personality preferences; and then anxiety toward teaching, but not their attitude, were found to be related to their loci of control. The aspiring teachers with feelings of internal control reported less anxiety about teaching than did those prospective teachers with middle or high feelings of externality. The extroverted prospective teachers reported less initial anxiety and reduced their anxiety about teaching to a greater extent during teacher education than did their introverted cohorts, and the judging prospective teachers reported a more positive attitude about teaching than did their perceptive cohorts. Neither the Myers-Briggs' sensing-intuitive nor the thinking-feeling preferences were found to be related to either the attitude or anxiety measures.

The finding of a decrease in anxiety about teaching during teacher preparation in the present study is consistent with the developmental model of teacher evolution; but, contrary to the developmental model, attitude toward teaching did not become increasingly more positive during the period of undergraduate teacher education. Pigge & Marso (1987) also reported a decrease in anxiety but no change in attitude about teaching during teacher preparation for cross-sectional samples of aspiring teachers. In contrast, Callahan (1980) and Lipka and Garlet (1981) have reported that prospective teachers develop less positive attitudes toward teaching during preservice education.

Data obtained from the Myers-Briggs and Rotter instruments for this sample of prospective teachers appear to be generally consistent with findings reported by Myers and McCaulley (1985) and Lefcourt (1982). These researchers have described public school teachers as likely to be internally controlled, extroverted, sensing, feeling, and judging (i.e., being responsible for their own behavior; relating more easily to the outer world than to the inner world of ideas; possessing a preference for working with known facts rather than searching for possibilities and relationships; making decisions based upon personal values rather than on impersonal analysis and logic; and having a preference for a planned and orderly way of life rather than a flexible, spontaneous way, respectively).

The results of this study, although limited to a sample from a single teacher education program, have provided further evidence that measurable and generally desirable (at least in a theoretical sense) affective changes in prospective teachers do occur during teacher preparation. Secondly, the present study provides more evidence that affec-

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tive changes in prospective teachers during preservice education are predictable and are likely to be influenced by their personality type and perceptions of locus of control. Regarding future implications, it is anticipated that continued research on the affective attributes of those teacher candidates who successfully progress through early career development and who have a positive impact upon their pupils may eventually result in sufficient knowledge to better counsel individuals considering whether or not they might become successful teachers.

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Some Issues in Constructing, Managing, and Using Large Qualitative Databases[1].

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I hope that this article helps researchers who are thinking about building qualitative databases for future analysis. My emphasis is on the construction, managing, and building of large databases. In the article I discuss seven possible purposes for qualitative databases. I discuss how researchers could organize the storage and the retrieval of data in useful subsets for analysis and presentation. Therefore, I emphasize the period before data collection and I will not review specialized qualitative data analysis packages available on mainframes or IBM-type and Macintosh personal computers. Specialized qualitative analysis packages suit individual researchers working with small data sets. I have opinions on data analysis programs but I do not discuss them in this article. Readers interested in qualitative data analysis using computers could try Pfaffenberger (1988) or the collection of articles edited by Fielding and Lee (1991).

I want to turn our attention to the neglected issue of data storage and its retrieval before analysis. Sadly, when it comes to qualitative data there is truth in the old joke that the analysis quality was as good as the size of the researcher's floor. Floor size limited the area where the researcher could spread out sheets of paper or index cards and then play an adult version of Kim's Game or Concentration, the memory game we played as children. The computer can contribute in either a positive or negative way to enlarge that "physical floor space and its effectiveness."

These thoughts prepare the way for researchers to design their database for their individual projects. In my experience, it is a mistake to postpone serious reflection about how we will store and manage the data until after data collection. An all too common response by researchers is to say, "I am going to use X software to organize and analyze my data." It appears to some people that making this statement represents sufficient preplanning on their part.

I base this article upon experiences I had designing large-scale databases at the National Center for Research on Teacher Learning (NCRTL) at Michigan State University. However, researchers with small data sets will find something they can apply to their research. I assume that my reader knows little about computers and software beyond basic wordprocessing. Finally, I have no hidden agenda to "sell" my favorite software to the reader; one of my favorite database programs is no longer on the market.

[1] All footnotes are presented at end of article.

Initial Qualitative Database Building Issues

First, we must consider carefully the human, hardware, and software resources available. I find researchers prepared to agonize over every detail designing their instruments. They invest inordinate amounts of time collecting the data. Researchers devote considerable time and energy into analyzing their data. However, those same careful researchers often store that data by throwing it to an unlabeled box in random order.

A research database manager acts as diplomatic scold, cleaner, and defender against data neglect that blights almost every project. Choosing the person responsible for constructing the database can be a major personnel decision with direct impact on the eventual research produced. It is worth asking if you are comfortable learning and using the complex database software. If the honest answer is that you, the researcher, feel uncomfortable with anything but basic word-processing, then you are either going to devote time to learn or going to rely on an "expert."

Second, computer databases quickly grow very large. These days larger capacity hard disks, faster processing machines, and computer data compression programs[2] are available, but these technological advances carry a cost that goes beyond dollars and cents. For example, data compression programs, like all software, have version numbers printed on the box or disks. It is easy to forget that any version is never perfect, and the compression software may fail usually when we least expect it. A good compression program should be "seamless." This means we should not notice the wordprocessing, database, and other programs running slowly, not performing some functions, or freezing the screen at inconvenient moments. Also, compression programs take up the computer's Random Access Memory (RAM). Modern computer software makes great demands on RAM, and this demand leaves users frustrated when the computer refuses to run a program because there is not enough RAM memory free. Finally, the compression program must work harmoniously with your chosen back-up program. A computer environment can produce unexpected problems that take experts weeks to solve[3].

Intense competition among computer hardware companies has made large hard disks cheap. Unfortunately, the larger disk capacity tempts users to store bigger data sets, and this increases the costs involved in a disk failure. We all hate to backup data files. I invent creative reasons

to postpone feeding that stack of disks into the machine. Of course, there are alternatives to backing up a hard disk with floppies. Removable hard disk drives and other devices exist for the express purpose of backing up hard disks. I urge a small pilot experiment that tests the backup system chosen with real data. The time to discover that the back-up system does not work is before data are entered and not when the completed database collapses. Backup is a time-consuming chore but one that is essential.

At the NCRTL I accidentally erased several weeks' work. Other disk failures on my computer built a sense of insecurity about the computer's hard disk storage[4]. My sister, a professional archivist, reinforced my insecurities by telling me that archivists only speculate on the "shelf life" and eventual degrading of floppy disks. The Center used two floppy backup disk sets which added cost, especially as I used new disks every year just in case constant use affected their reliability. Each week I backed up the data on one set and then the next week I used the other set. The Central Point PC-Tools backup program allowed me to date and record when I used each set. I kept a third backup set that I used once a month at home so if the Center burnt to the ground I had another set. Other Center staff kept copies at home or in other locations. Later, when we had a reliable computer network, the NCRTL maintained a secure subdirectory where I loaded yet another copy. At a conservative estimate, the NCRTL spent several million dollars collecting the data. Therefore, it did not make sense to Center administrators to save a few dollars economizing on disks and regular backup.

Third, an important step is to estimate the final database's size. There is nothing as embarrassing and potentially dangerous as partially constructing a database and then discovering the disk will not store the complete data set. Therefore, a good estimate saves time and anxiety. Transferring data already in the software format to a new hard disk is an operation full of unpleasant surprises and not for the faint-hearted.

I employ the rule of thumb that a page of interview text in a wordprocessing program occupies twice that in kilobytes as a basic unit in my estimate. For example, even with fast talkers a two-hour interview generates a sixty page transcript that creates a one hundred and twenty thousand kilobyte file. The pilot instruments help document size estimates. The sampling or research design gives the potential volume of interviews, observations and other possible instruments that generate data. A calculator and half an hour should give a reasonable estimate for the database size.

At the NCRTL, we held many meetings after pilot site visits to discuss the final site selection and possible data collection schedules. It should surprise nobody that participants argued to expand, not to limit, the data collection schedule over several geographical sites. We planned three interview and observation points with one site visit per year planned at the eleven selected programs.

I used the discussions to determine that there would be ten to fifteen program participant interviews. The pilot instruments gave me an estimate that those interviews would last about two hours and generate sixty pages each. An observation translated into another twenty pages per person. Then I added six thousand pages of program-related interviews and a further two thousand pages for observation and collected documents. The director and I sat one afternoon and estimated the final Teacher Education and Learning to Teach (TELT) database could generate twenty-nine thousand seven hundred pages of program participant interviews (15 people * 60 pages * 3 visits * 11 sites), nine thousand nine hundred pages of observation (15 people * 20 pages * 3 visits * 11 sites), and eight thousand pages of other data. Adding a little extra for safety, we discovered we were about to have fifty thousand pages[5] of data (95 MB). This large size estimate resulted from what many researchers had argued was an inadequate data collection schedule.

The disk size estimate of 95 MB is too small because it ignores the fact that wordprocessing and database programs create temporary files and therefore need extra space to operate. This software requirement causes those annoying "disk full" message even when the disk still shows some free space. Furthermore, database and infobase software require extra disk space to make a backup copy during "house-cleaning duties" that update the index[6] and repair damaged texts. Cheaper and larger hard disks should encourage generous estimates. Once the disk is filled, you need a computer expert's help to preserve the database's integrity. For example, without enough space to copy the database index files, data can become irretrievable. Any extra hard disk space is rarely wasted because we need it for exporting data subsets and for working on them without resorting to slower floppy disks.

After we know the data set's size, the next step is to consider which machine should become the data's storehouse. The following questions might guide that thinking.

A) Is anyone willing to sacrifice their office computer or should we buy a new one just for the database?

Obviously this depends on the size of the rough estimate for the data set size. As a rule, the computer we use for daily work may not be the best choice for serious database storage. An exception to this situation is a small data set one person gathered, transcribed, and analyzed. The advantage for individual researchers is that they can retrieve data for quotes or revisit the data to refresh their memory as they write. If the researcher is not personally building and retrieving the data (perhaps a graduate student is doing it, for example), or more than one analyst will look at the data, then access to the computer and office is an issue.

A computer virus is more than just annoying. Undetected, a virus destroys data and all current writing projects. People transcribing interviews may use infected computers beyond the researcher's ability to control. It

makes sense to think about scheduling a computer (the computer that holds the database is fine provided we invoke security locks to limit access to the database) for transcribers to use. Supplying the computer may be better than contracting the transcription work out to unknown computer environments. Researchers exercise prudence by giving transcribers new clean disks, making backup copies, and printing one hard copy of the transcript. Also, it is good to install virus-protection software in any computer used in the research project. Besides the remote possibility of picking up a computer virus on previously used disks, recycled floppy disks fail with age, weather conditions, and use.

B) Do I need a state-of-the-art machine?

The answer depends on many things, including how big the database is likely to get. Furthermore, the choice of database software will make a difference. For example, IBM machines where the database runs in a Windows environment will need at least 4 MB and probably work better with 16 MB of random access memory. However, if the machine is used to store only the database, then high processor speed is not essential. Researchers can simply set the computer to work on a task and then leave it to complete it while they get on with other things.

C) Do we all need the same type of computer?

If the researcher dedicates a single computer, then there is the issue of whether the database software produces files compatible with other machines used by people on the project. Incompatibility between Apple and IBM products is disappearing but still holds surprises for those trying to exchange files. Translation programs between different software applications add another step and time and money getting the data to other researchers. The costs increase because, as with translations between different foreign languages, data get lost and garbled in the translation.

At the NCRTL I was constantly surprised how many versions of Disk Operating Systems, RAM resident programs, and strange wordprocessing systems existed in our college alone. You may be less thrilled when people accuse you of giving them incompatible files or files that retrieve in less than perfect form. Certain hardware types, software, and disk interactions produce bizarre and mysterious results.

Considerations for Computer Database Construction According to Purpose

1) Using the Computer to Store and Retrieve Text

I assume under this first option that one central computer holds all the interview transcripts, observation write-ups, and other textual material. The computer is like a large filing cabinet with many similar organizing principles. Small data packets are retrieved from the database and are given to researchers in either printed or floppy disk form.

Data entry. Entering data is a tedious task that, like its quantitative counterpart, requires accuracy and care. At the NCRTL we set up a centralized transcription service which takes the drudgery out of producing transcripts. Earlier attempts to "contract out" this work resulted in hours of extra work when the transcripts arrived in less than perfect form to import into the database. We found it very difficult at the Center to get people to "edit and review" transcripts; this task was a low priority on many researchers' agendas. There can be lively debate regarding intonation, pauses, and whether "Umm" has three m's or five; yet translating that conversation into the required text finds few volunteers.

At the Center we spent time thinking about the best format for the transcribed files. Footnotes, flying headers, even tabulation conventions can add hours of work if something has to be stripped from the transcription to translate the interview file into the database software format. Not all database software allows the full range of fonts, highlighting, and other special characters that most wordprocessing software offers.

Furthermore, some database software will not handle every data file created by any program. One NCRTL researcher working off-campus had a translation program specially written on a mainframe to convert the data files produced on an old Apple machine and its outdated wordprocessor. The specific problem is not the same now, but seven years ago there were no translation programs that worked reliably. I dreaded the arrival of disks that I knew would take several hours to prepare before I could import them into the database.

Another issue that requires some difficult decisions is the record size in the database. Different database programs place restrictions on the text size or the fields in a single entry. This is the old unit of analysis problem in computer form. As many researchers have their own observation or field note writing styles, this needs full and frank discussion within the research team. Some database software is flexible in working with various data formats; other software severely restricts the format to increase the searching and reporting power for the database user. A frank discussion makes public individual team members' misgivings about the inevitable reduction of data in the database. The discovery that colleagues disagree with the data reduction policy is best made before the data are collected. Otherwise, the data entry personnel put up with the disgruntled researcher's disagreement or outright refusal to give the data in the required form. Entering data is a mindless and generally a thankless task, but never has the computer phrase "Garbage In, Garbage Out" been so literally true.

We could scan documents into the database. It is important to remember that scanners and the software to run them make two different types of digital (computer ready) images. Scanners either make computer graphic images (pictures) or they convert the written text into the computer standard ASCII. The computer cannot read text in a graphic image scan as text. This easily forgotten fact causes problems when a researcher suggests that scanned

graphic images of children's work and other handwritten documents be included in the database. These computer pictures are not treated like text by database software, so it is impossible (now) to search for any words that happen to be scanned in that graphic image. Furthermore, handwriting cannot easily be scanned and converted into text, only stored as an image, although this is soon becoming possible.

The NCRTL had state-of-the-art software ($1,200) and a manual one-sheet feed scanner. A single-sheet feeder allowed us to adjust the page correctly before scanning the document. Scanners do not tolerate misaligned originals. A multisheet feeder cuts down handling but does not significantly improve the scanning speed for the average documents researchers bring back from the field. Sheet feeders require staple and paper clip removal, plus clean and flat originals. Just think how often the sheet feeder jams or misfeeds on a photocopy machine. As a rule of thumb, 20 laser-quality printed pages take two hours to transfer into the database. The scanner, like a photocopier, is very sensitive to poor document quality. The time spent in correcting errors on poorly-printed material rapidly increases data entry time.

Data storing. Database, personal information manager, or infobase software require extra hard disk space. They need that space for backup copies, scratch (working) files, and various maintenance programs. As a rule of thumb I calculate the data set size and then have a hard disk at least twice as big. A reliable commercial backup program and a regular backup schedule during the database building are mandatory.

Commercial backup programs have a hidden advantage because they allow easy data sharing between researchers in the database's original form (with the codewords etc.) via the backup copy. This is better than exporting data in ASCII versions where the codewords and formatting for the database are lost in the exported file. Colleagues can restore the backup file on their machine using the same backup program. This avoids the data transfer problems. If we all use the same commercially available backup program on the different computers, we can exchange data irrespective of the DOS versions on each computer. Unfortunately, the DOS software backup function only restores the lost data to a machine using the same DOS software and version number. Apple machines may not have backup compatibility problems between computer models, but this merits a thorough investigation before deciding that operating system backup copies are a good way to share the data.

Data retrieving. The key issue in database building is how well we can search and retrieve the data once it is built. Data reduction decisions could return to haunt researchers when they discover that the data retrieved are no good for their proposed analysis. Sometimes we must choose and insert the codewords for the data as they are entered into the database. I think of these software packages as favoring a "library science" design. A library science design assumes a largely static database with changes occurring at the margins as new book titles get added and other titles are deleted. A library search should give the required book or books. We do not want "false hits" which identify books we are not interested in. This means that the index matches how people will want to search the data (just like the labels in physical file cabinets). The library science design demands clear descriptive category codewords attached to each individual text. For example, clear descriptive coding allows us to retrieve data units that were coded for secondary math teachers only. Another possibility is creating categories that distinguish between different data collection times or specific interview questions.

The "library science" database design is perfect for research data sets that are retrieved in small packets and analyzed later. Coding categories are related to the research questions we investigate. It helps at the design stage to experiment with what a search for the required data will look like and then imagine the result of that search. I spent several weeks using the database software and some pilot data testing different size data units and running searches. At the NCRTL, the research questions posed concerned two academic subjects, mathematics and writing; thus suggesting two descriptive categories. We had research questions that asked about differences in views about teaching among preservice, inservice, and participants in various induction programs. These research questions suggest a set of useful descriptive codewords to attach to data units[7].

The database software choice meant that we reduce interview data into a single question unit. However, the software allowed building links between the questions, so we could recreate whole interview sections. This linking also allowed for cases where informants returned to earlier questions in a later answer. Most observations were too large for the software to handle as a unit, so we used the linking strategy again. On balance, the interview data unit made sense; but the decision to keep the observations as units which were too large for the database to handle was poor. Despite the links, this meant in practice it was easy to lose whole observation sections during a search.

The "full index" database design favors a research-style search. In the library science search we zero in on data with precise descriptive code categories attached to them. In a full index database we can search for analytic coding categories that were unknown when the database was designed. Using the TELT database as an example there is an obvious difference between searching for the descriptive category "question C3" and identifying the text that corresponds to the analytic category "anxious about teaching math." Question C3 is a description that applied to a specific piece of data, whereas the analytic code is applied to different texts spread throughout the interview.

"Full index" database software indexes all words in the text. Full index packages give frequency counts, and the

user can preview those texts that have certain words in them. Indexing every word eliminates the need to devise the "perfect codeword" scheme before we collect the data. In a full index database we can explore emerging themes that come from familiarity with the data. A full index system gives the option of searching groups of texts to find multiple word frequencies. For example, a simple word search for "empowerment" might produce 650 texts (perhaps over a megabyte of information). The search could narrow by looking for the topic "teacher NOT student empowerment" in the database. It is even possible to run multiple word searches, "teacher empowerment" and "student empowerment," to compare the results. Most full index programs can reduce the search to trim the data packet size to more manageable proportions before we transfer the search results onto a disk or print it.

Database software has sophisticated word searching capabilities that include: and\or\but statements, wildcard or fuzzy (similar to brain-storming sessions) searches. The key benefit here is that the software will report the search result in a form that is in accord with the researcher's planned analysis. Most database software packages incorporate library science and full index design elements. However, there are differences, and thorough pilot-testing will pay dividends later. Finally, searching and transferring data in and out of the database are decision issues that depend on the combination of the database software and the computer hardware. Sophisticated searches and large data transfers place demands on the computer. These operations, such as a complex search or importing large data sets into full index design databases, can take the machine several hours to complete.

Finally, for data retrieval, we should think about the form researchers in our project want the data. Sometimes the database software allows us to chop the data into floppy disk sized chunks (360 KB, 720 KB, or 1.2 MB). Other software comes with a separate utility (a stand-alone program) to export data onto several disks. A final alternative is to rely on backup programs to spread data over several disks. Several database programs compress the data during the export, which, while it saves floppy disk space, adds another layer of complexity. It is easy to forget that the person receiving the data does not have the file to decompress the data or that the result of these two extra operations is some data loss.

If you want your data in printed form then a fast printer is a consideration. Four 60 page interviews, at six pages per minute on the LaserJet, equals 45 minutes of printing and refilling the paper tray. One NCRTL researcher requested data based on every mention of a word. This investigator asked that I conduct a "fuzzy" search so that I identified all data units with this word". I carried out the search looking for all words with the root pattern—"teach" such as teaching and teacher. The search produced very large text files (just under two megabytes in all). I assumed the researcher would read the files from the screen and discard unnecessary information. Later, I learned she printed all the files, about one thousand pages, which tied up that shared printer for about three hours. The lesson I learned is to ask how the data are to be analyzed after the search.

2) Using the Computer to Store and Retrieve Graphics

Graphic files are very different from files that store text. The most visible difference is that we may edit a graphic file only in drawing software, not wordprocessing software. If you want the database software to search for words, they have to be typed as text and then linked to the graphic file, perhaps as a title or footnote. A database text search cannot look in a graphic file for words that appear in the picture. A proposed database filled with graphic images is suited to the "library science" design and not to the "full index" design which is more suited to analytic text searches. People who are transferring their photographs onto CD-ROM disks face the same search problem as a researcher who has 100 student work examples stored in graphic files. Each picture should be clearly and uniquely identified for quick retrieval.

Scanning images (not text) is very useful for keeping records like student handwriting. Here the issue is whether the database software we use allows graphic images to be imported and shown on a screen. Sharing graphic images requires special drivers (instructions to make them appear on the screen) that may mean purchasing multiple copies of the database software. Not all researchers want to learn how to operate the database software that allows graphic image display. Wordprocessors have limited graphic display capacities.

The other major issue is the size of graphic files. A child's one-page homework could produce a file over 100 KB in size. A few seconds of video can involve file sizes beyond the floppy disk capacity. CD-ROM (laser disk) is then an options, but involves extra expense. There are compact disks that allow users to write files, but they are very new and therefore expensive. The alternative is to get the video tape commercially transferred onto the CD disk.

3) Using the Computer to Analyze Text

When we move beyond using the computer like an electronic filing cabinet, then we add power, complexity, and costs to the database. Some database software provide powerful data analysis tools. Several researchers at the NCRTL used the database software for analysis. There are other researchers who used separate analysis software. In general, database software suits interpretive and descriptive research styles but is less useful for theory building analysis styles. Several specialized analysis packages are more suited to constructing hypotheses and then testing them on the data. The decision to use different qualitative analysis software raises new compatibility issues for the database output. These specialized packages restrict the file sizes and the format for data to be imported. For example, the Ethnograph analysis software imports ASCII files that are less than 40 characters wide.

A major task in analysis is inserting analytic categories into the data, not just associating simple descriptive codewords to units of data. Those who participated in or who observed the coding and "chunking" of NCRTE[9] data (splitting interview transcripts into meaningful analysis units) appreciated the effort and the organization adding analytic coding involved. The decision required people to hold lengthy meetings to code the questions and sections. An eight-person team inserted those analytic codes into the interviews using over 300 keyboard macros developed to minimize typing errors. In a few sentences I have condensed a two-year effort. My conclusion with hindsight would be that analytic coding has to be idiosyncratic to the specific analysis purposes. In some projects general analytic codes might make sense, but each analytic code added across the whole database increases time and effort costs dramatically.

4) Using the Computer to Analyze Graphic Materials

Researchers who propose to use the computer to analyze graphic materials are entering a new field. Some programs designed for hypermedia or multimedia presentations allow fine control of visual, audio and text material. With effort and time these programs have interesting analytic possibilities. For example, you can control video images from a CD disk to single frames. If micro-analysis of visual material, like video, is a major research interest, then the new software will allow people to attach text coding to small pieces of observation. However, we must observe that being this close to technology's cutting edge carries the risk of being badly wounded!

5) Using Computers to Distribute Data Stored on One Machine to Others.

Here the special issue is the link between the computers. In the single building scenario, networking is a workable possibility. Maintaining and upgrading the network is the responsibility of the college computer support department. This may raise some data control or security issues. If the network is used to transfer information then the network must be reliable. It is worth asking colleagues how often in a week the network denied them access. Another possibility with networked computers is to get the transcriptions entered directly into the database located in the network server from the "transcribing factory."

In sending data between two computers you enter the world of modems, mainframe computers and ethernet connections. Data transfer on a modem can involve hours of fun for both the giving and receiving parties. The larger the files the more fun and expense! Communicating among two or more computers that can be radically different can be a complex task; sometimes, the best you can produce is a successful "handshake" (link).

The ethernet connection board is like a super-fast modem in the computer. This board allows almost instantaneous communication using File Transfer Packets (FTP). Internet, which is best reached through ethernet boards, is worldwide. Most higher education institutions provide easy ways to enter the Internet network. However, the Internet system is very new and not a friendly environment for novice computer users. Researchers soon discover that the connection of personal computers through ethernet or other wide area network systems is not a trivial or an inexpensive task. Suppose we keep the files on one machine, and colleagues can reach all the files on that computer's disk and transfer (or erase or alter) those files. We need to remember that providing access to a computer opens the possibility of access for anyone else on the Internet. Therefore, giving people remote access to a computer raises security and data integrity issues.

6) Using the Computer to Allow Researchers Access to Data From Remote Sites

The purpose here is to allow researchers to explore the database from their computers. Researchers can consider a network version of the database software that allows different access levels to the data. Most database software has a network version. This requires the network manager to set up the software in the network server and maintain security. It also requires consultation and planning with the college computer support group. There is a difference between network and single-user software. Database software for single machines often has blocks (and a bug that destroys the data) to discourage "pirate" network use. To network, you must either pay for the more expensive network version or investigate options such as adapting existing network database programs.

Researchers who plan to establish their databases on the mainframe certainly allow for data sharing anywhere in the world. I can imagine researchers in the field being able to enter data or do analysis from any location. However, anyone involved with such a project would be a brave pioneer in education research. Mainframe database programs cost thousands of dollars. Reliability is a plus, while the less friendly mainframe environment is a big minus. Hiring an expert on the particular mainframe program to consult for the database design is a cost-saving decision.

7) Using the Computer to Provide Innovative Presentations of Analysis

I can imagine some interesting uses for database software. There are presentation programs that allow exciting teaching or professional data presentations. I would urge people to think about distributing research results using the database and other software available. Nowadays, the programs are easier to use and multimedia setups are more readily available at professional meetings. However, problems with data transfer, computer networks and special interest listservers (to share data or results with colleagues), are possible with newly developed presentation software.

Summary

I hope my readers now agree that data management before analysis is an important step. Although I gave examples based on large data sets from big projects, I employ the same thinking when I help others or when I build smaller databases. Whatever analysis we want, it is crucial that it is organized so that we can exploit the data we carefully gathered to its fullest extent.

I identified two database designs, library science and full-index, which do not represent an either-or choice. Neither would I argue that one design is better than another. The choice reflects stylistic differences. With your research questions and your research style, you are in the best position to know what variety of database best suits your needs. I introduced seven data management purposes that form a hierarchy of increasing complexity.

The simplest purposes I suggested were that a computer is no more than a compact and an efficient electronic filing cabinet. Researchers can use the computer's capability to search and retrieve data that represents a great improvement over paper and tapes thrown into a box. Good data management results in better analysis.

A higher-level purpose adds analysis to retrieval and storage. The database software could analyze the data, although I think most commercial databases have significant limitations as analysis tools. Database software in the library science style restricts the search and therefore is likely to make the analyst miss interesting but obscure relationships. There are some radically different database and information management software packages available, so it pays to evaluate several and not rely on the recommendation of a converted individual who uses one package.

At the highest levels, database software represents some powerful possibilities to share data among colleagues for either analysis or presentation purposes. There are several database packages that offer the possibility to share data across incompatible computer brands (IBM and Macintosh, so-called multiplatform software) and share the data across different operating systems (for example UNIX, DOS). Also, many commercial database packages follow the SQL standard (this allows network users to find information in a database though they do not have the program that created it). Several database packages have programming capabilities that allow automatic coding, embedding sound and pictures in a text, or making automatic changes in the text's presentation.

It is possible to spend too much time perfecting the data management scheme, time that would be better spent looking at the data. Also, I am sympathetic with those who argue that the computer is a reductionist tool that does great violence to data. Building a database involves decisions that at the time may seem insignificant and yet can irrevocably close analytic possibilities. However, that unsorted box of tapes does not represent unlimited analytic possibilities that will be fully explored by the researcher. The computer and the box both reduce the analytic options. Therefore, we are left with deciding whether we like to control that reduction or simply let it occur through our inactivity.

FOOTNOTES

[1] The author would like to thank G. W. McDiarmid, D.L. Peterson, and two anonymous reviewers for their comments on earlier drafts of this article. Responsibility for any remaining mistakes remain the authors.

[2] Compression programs use technical tricks that squeeze files into smaller spaces or that enlarge the storage space available on the hard disk. Some Disk Operating Systems (e.g., MS-DOS 6.0) come with compression programs. An example of a popular stand-alone compression program is Stacker by Stac Electronics.

[3] My best example is a seemingly innocent joystick controller card that after working perfectly suddenly caused WordPerfect to lock the whole machine when I tried to preview my document before printing. It took several weeks and numerous consultations to identify the problem.

[4] A hard-disk is the non-removable drive(s) in the computer. A floppy disk is removable although the 3 1/2 inch versions are hardly flexible. Magnetic back-up tapes use the same technology to store data. CD-ROM disks on which users can store data are expensive, and they are used by large companies to store legally required records.

[5] The 50,000 pages or 95MB estimate was wrong. The TELT database was 70 MB. However, the estimate allowed me to argue for a 150 MB disk to accomodate other software. As the next paragraph describes, working files and other database house cleaning files required 140 MB to effectively run the database. Therefore, sheer luck allowed me to look right when I was wrong.

[6] A database index is like the index of a book. It allows the reader to search for topics and words. However, if a database loses its index, you cannot access the database. In the book's case, although it takes longer, you can still look thorugh the pages to find things without an index.

[7] For those interested in a full description of the descriptive and analytic codes in the TELT database, see Mead, J. V. (1993). A guide to the Teacher Education and Learning To Teach Database. (Technical Series 93-2). East Lansing: Michigan State University, National Center for Research on Teacher Learning.

[8] I have changed the word I searched for because it would identify a colleague who is known for work in this area.

[9] The National Center for Research on Teacher Learning (NCRTL) was known during the TELT study as the National Center for Research on Teacher Education (NCRTE).

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Tenure and Promotion: Questions to Ask and Strategies for Success

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Advice is provided to prospective faculty concerning the questions they should ask about tenure and promotion procedures when they are interviewing for a position. This is followed by advice on strategies to adopt as a new faculty member to enhance the likelihood of earning tenure and promotion.

Seeking information about tenure and promotion while interviewing for a position may help you select a position that matches your goals and strengths. Policies appear in the faculty handbook or other written materials provided by the institution. Just as important are the current practices at the institution as they establish the norm. This article provides suggestions for gaining information regarding institutional policies and norms, as well as strategies that should help the beginning faculty member become successful at attaining both tenure and promotion.

Find out when probationary faculty (a faculty member in a full-time position that can lead to tenure) will be considered for tenure. Some institutions will grant early tenure; some will not. Additionally, be aware that norms regarding the granting of early tenure can change suddenly when new persons assume key administrative roles in the institution (e.g., president, chief academic officer). Early tenure refers to granting tenure to a probationary faculty member before his or her seventh year. To understand why this is considered early, it is useful to know the time-line adopted by many institutions. This time-line is congruent with the American Association of University Professors (A.A.U.P.) policies which consider a faculty member to have been tenured by an institution if it hires the person for an eighth year in a full-time faculty position. If a probationary faculty member will not be rehired and he or she has been with the institution two or more years, institutions usually inform the faculty member at least 12 months before the expiration of the contract. This gives the probationary faculty member a year in which to find a position at a different institution. This also means the institution must make its tenure decision by the faculty member's sixth year of service. Therefore, it is common for untenured faculty to submit their credentials at the beginning of their sixth year so that final decisions may be made toward the end of that year. Decisions made before the sixth year would be early decisions.

Determine whether tenure and promotion are linked together. The tradition at some institutions is to tie tenure with promotion (sometimes called "up or out"). In these institutions an assistant professor who is tenured is promoted to associate professor; an assistant professor whose credentials do not merit promotion is not tenured. Other institutions will, on occasion, tenure persons they do not promote. This may be because the candidate is filling a vital need for the institution or because it appears the candidate is making progress toward meeting the criteria for promotion.

Ask if the institution has tenure quotas and what percentage of the faculty in the department you will be joining is tenured. Tenure quotas are often in the form of a maximum percentage of the faculty within a department who may be tenured. If you are joining a department where all faculty are tenured or will have been considered for tenure when your turn comes, you should know that from the beginning. Even if the institution does not have stated tenure quotas, your case may be examined more closely, perhaps with slightly higher standards purposefully or unconsciously applied, if your tenure would result in a very high percent of tenured faculty within the department.

Find out who makes the tenure and promotion decision. This influences how accurately you and others providing guidance (e.g., your department chair) can judge the likelihood that you will be tenured. If the decision is based upon a vote of the department faculty and the recommendation of the department chair, it is easier to make accurate predictions than if the decision goes through department, college, and university committees in addition to the administrators at each level. On the other hand, when there are checks and balances of reviews at other levels, you may have some protection if the faculty in your department happen to apply higher standards than those in other segments of campus. Realistically, without the support of your department faculty, it is very unlikely that you will be given tenure. This is just as well since few would want to work daily with people who do not believe you belong in the department.

Ask for the institution's criteria for earning tenure and promotion. Detailed, precise statements of criteria are the exception, not the rule, and have not always proven helpful when available. At one midwestern institution a college of engineering developed a detailed point system that stated precisely how many points could be earned by each activity as well as the number of points needed for tenure and promotion. Although helpful in theory, in practice it was a nightmare. Faculty evaluated their credentials and decided they had enough points, while review committees arrived

at different conclusions. The system created more problems than it solved.

Determine what activities are considered within each area. Statements of criteria are apt to cover three areas: (a)teaching, (b) scholarly and/or creative activity, and (c) service. For example, some institutions count thesis supervision under teaching; others count it under service. Knowing what is considered in each area allows you to assess more accurately how you are dividing your efforts. Additionally, find out what kind of evidence is traditionally submitted in each area. Soon after you arrive on campus, begin files for each area into which you drop the evidence as it accumulates (e.g., a letter informing you a manuscript has been accepted for publication, records of service on a committee).

Ask for the relative weights given to the three areas. Answers may come in words (e.g., above average in two of the three areas and average in the third) or in percentages (e.g., 40% teaching, 40% research/scholarly activity, and 20% service). Follow up by asking for more precise information (e.g., how many journal articles constitutes above average). Expect qualified answers, especially if decisions are reviewed by committees at several levels, since no one can say ahead of time precisely what a given committee will judge as above average. Also, expect the answer to be qualified in terms of the nature of the publications or service (e.g., national refereed journal as opposed to invited state publication). Given a choice of areas to emphasize, it would be wise to select research and scholarly activity as an area of emphasis. This area is easier to document, is more apt to be valued as standards change over time, and is more apt to provide flexibility if you decide you would like to move to a different institution. Expect the standards and relative weights to change with time. Changes usually happen gradually but can occur rapidly as a result of new persons assuming key administrative positions (e.g., the chief academic officer of the institution, the dean of your college, and even perhaps your department chair).

Ask if your progress is reviewed before the actual time a tenure decision is made. At my institution, probationary faculty are reviewed twice their first year and once each year thereafter. Probationary faculty compile their vitae, much as they would at the time of tenure review, and submit it to the department chair. The department chair completes a form that evaluates each faculty member's performance and states whether the department faculty would recommend that the person be rehired. The chair meets with each probationary faculty member and reviews the evaluation. The faculty member signs the form indicating that he or she has seen the completed form. Faculty receive a copy of the completed form. If your institution follows a similar pattern, use developing your vita and annual report as an opportunity to review what you have done. Decide whether you need to adjust how you spend your time. However, if your institution does not require you to compile your vita each year, do so anyway. This provides an opportunity for self-evaluation and provides basic materials that you can use when developing your tenure review portfolio.

Read carefully any suggestions you receive in your written evaluation asking for clarifications as necessary. If you have a meeting with the department/personnel chair, record any oral suggestions regarding how you should change your efforts. If the report is completely positive, ask whether if you continue doing the same things in the same way, you can expect to be granted tenure when the time comes. If change is needed, explore ways your teaching and service assignments might be adjusted to support the needed changes. Leave the meeting with an agreement on how you should divide your time during the next year. Return to this agreement any time you are asked to accept additional assignments. It is easier to turn down a request to chair a committee if you can say that your department chair has asked you to spend less time on service and more on writing. Listen carefully to the chair's suggestions for change. This is critical for developing realistic notions about whether you will be granted tenure. For example, last year a probationary faculty member in my department was turned down for tenure. His department chair and unit coordinator both said the yearly reviews should have prepared him for that decision; still, he was shocked by it. He evidently had heard only the positive comments.

Ask one or two tenured faculty to review your credentials about halfway through your probationary period if the procedures used by your department do not routinely provide feedback from faculty other than the department chair. Using this approach you will not count on only one person's opinion. For example, in my department, each year all tenured faculty read the credentials of probationary faculty and vote on whether each person should be rehired. Their votes count, and their advice on how to strengthen the credentials are shared with the faculty member. This provides the probationary faculty member with a very good idea of what the tenure vote will be. These early reviews by tenured faculty were instituted after a probationary faculty member had consistently received positive yearly reviews from a department chair only to be turned down for tenure by the sixth-year faculty vote. Usually, a chair's standards are congruent with those of the faculty, but that is not always the case.

Find one or two established faculty from whom you can seek advice you trust. You may find many willing to give advice. But, you should choose carefully when deciding to whom you will listen. Evaluate the advice you are given in terms of whether it is based upon your best interests or some private agenda the advisor may have. Even department chairs sometimes provide advice that is not congruent with college and university standards. Two assistant professors I know had a department chair who stressed the importance of service while the college and university were stressing the importance of research and writing. Both were tenured but not promoted. Therefore,

determine what is being stressed by your dean and by the university.

Collect and save data you will need when you compile your vita for tenure review. At my institution, the basic document may not exceed 25 pages but may be accompanied by supporting materials. Teaching is a difficult area to document. Research institutions may pay little if any attention to this area as long as you teach your assigned classes and no horror stories emerge. In my department, it is unlikely that a poor teacher will receive a positive tenure vote. Therefore, new faculty are advised to concentrate initially on getting their teaching ratings in order, in the first semester or two, and then concentrate on research and writing.

Find out what other faculty typically use to obtain student evaluations of teaching. You will need to submit student evaluations of your teaching. Probationary faculty are wise to collect this information for every class they teach. Since it is not mandated, such data may be collected but need not be submitted for every class if the faculty member chooses. Adopt a single form for student evaluations and use it throughout your probationary years. It is easiest to improve your ratings during those early semesters, and that improvement can only be seen if the same instrument is used semester after semester. Additionally, an evaluation form that gives normative data comparing your student ratings with those of other faculty[1] provides more useful information to you and those reviewing your vita. U.S. students tend to be kind in their ratings. Experienced faculty and administrators know this and are less impressed with ratings the naive faculty member may think are exceptional. If you submit student comments for a class, include all comments and be sure readers know you have submitted all of them. Any teacher, no matter how bad, can find a few positive student comments over a period. Exclusively positive comments make review committee members suspicious since it is generally impossible to please all students in a class.

Be judicious in terms of how much time you spend on information materials about the courses you teach. Course syllabi sometimes provide useful information about teaching if they indicate how current the course content is. Generally weaker candidates, those with fewer publications, spend more time trying to convince review committees they are excellent teachers.

Be aware that scholarly and creative activity is the area easiest to document as long as it is in the form of publications. As with most evidence of scholarship, different kinds of books carry different weight. A textbook for undergraduate or graduate students is less prestigious than a book for fellow researchers in your field. Books published by reputable publishing houses carry more weight than those published by local publishers. Likewise, articles in nationally or internationally distributed journals carry more weight than those appearing in regional, state, or local journals. It is unlikely several publications in local or state journals will count as much as a single article in a more prestigious journal. University and college review committees cannot be familiar with the journals in all disciplines. They may depend on information such as whether the journal is refereed, the percent of the submitted manuscripts that are rejected, and how widely the journal is distributed as indicators of the quality of the journal. Providing this kind of information in your credentials conveys the idea that you have nothing to hide.

Do not underestimate the amount of time it takes between initial submission of a manuscript and its acceptance. Some journals publish with each article the date they received and accepted the manuscript. Well-run prestigious journals in my discipline frequently report lags of four to six months. Other journals are less willing to print that information. One hears stories of much longer delays.

The moral of this story is to hit the ground running—submit as many articles as soon as you can. Your dissertation is a good starting place. If a recent review of the literature on your topic has not been published, you may be able to develop at least two articles from it—a review of the literature and the experiment you ran. For any manuscript develop a list of possible journals rank-ordered from the most to least prestigious. Submit the manuscript to the most prestigious one you believe might publish it. If it is accepted, keep the acceptance letter (it can be a year or more between acceptance and printing). A copy of that letter in your tenure file usually counts as much as an article already in print. If it is rejected, read the reviews carefully. If they point out something you can easily fix and you believe it makes a major improvement, make the change and resubmit immediately to the next journal on your list. Do not spend time making minor revisions until you find a journal willing to accept it if you make the revisions they request. You can waste time making revisions that would never be requested by the journal that publishes it. Most importantly, don't give up! It is hard to read negative reviews of your work and too easy to give up.

Two true stories may help you persist. One is about an article submitted to the top journal in its discipline that was torn apart and rejected. It was then submitted to the second journal in the discipline, published, and later selected as the outstanding article published that year. The second story is about a professor who had published almost 100 journal articles and 23 books before his untimely death at age 40. To drive home the point of not giving up he told his graduate students about an article he submitted to 11 different journals before it was accepted.

Negotiate the terms of your employment, if you are moving from one institution to another, so that your service at the prior institution does not count toward your probationary years at the new institution. This is because it takes a long time to have manuscripts accepted for publication. The ethics in most disciplines dictate that a manuscript be submitted to only one journal at a time. If you have some publications from your prior service, you may want to count that prior service. If you have very few

or none, it is wise to give yourself the maximum amount of time to build the necessary publication record. You have little to lose, especially if the institution gives early tenure. Persons interviewing at my institution seem to suspect that this advice is given to them because it is better for the institution. Yet, I have known several faculty who fought to count the maximum number years of prior service at the time of employment only to regret it later when they discovered they would have profited from having more time before the tenure decision. Do not overlook the fact that many hours during the first year at an institution are spent preparing course materials and adjusting to the kinds of students who take the courses assigned to you. Reteaching a course requires much less time.

Regularly schedule and protect your time for doing research. This is an important habit to establish early in your career. One difficulty in conducting research is that there are no deadlines except those you establish for yourself. The lecture notes for tomorrow's class or the exams you must grade do have deadlines. Working with colleagues on research can provide structure in that you establish meetings and promise to do certain tasks before each meeting. This leads to publications with multiple authors. Be forewarned that review committees take different views of coauthored articles. I have heard it used as evidence of the candidate's willingness to share his or her expertise with fellow faculty—a strength. I have also heard it viewed as a red flag possibly signaling that the candidate is unable to do quality work independently. Perhaps some of both is the best strategy, especially if your campus does not have a clear, established way of viewing coauthored works.

Select one or maybe two areas for your research. Be sure the specialty is something you value and are genuinely interested in since you will spend much time with it. Tenure and promotion committees are frequently concerned with how much impact your research and writing has had on the field (faculty at other institutions who review your credentials are often asked to provide such information). A series of studies in an area has a greater chance of influencing the field. Additionally, the journals I read seem to contain more and more articles describing a series of studies on a given topic. This means a single study that once produced an article now has less chance of being published by itself.

Request joint authorship in return for your help before you become involved, when asked for assistance which appears to entail a substantial commitment. This way you will have something to show for the time you spend. After all, time is your most precious resource. If you have expertise valued by fellow faculty, for example knowledge of research design and data analysis, you may find other faculty asking for advice and help. Don't be surprised if you are the most up-to-date. After all, you have just completed education that allowed you to devote full time to increasing your knowledge with the guidance of several faculty specialized in different areas. Your fellow faculty spend considerable time passing on to students what they know, which leaves them less time for reading and learning.

Ask your colleagues how they document their achievements. Creative work generally replaces scholarly research in some disciplines. Authors of poetry and stories also have to publish their work, so much of what has been said earlier still applies to them. Artists and performers are expected to create new works of art or to perform. Giving shows or recitals, being invited to give them, and receiving awards in competitions become the evidence that the faculty member's work is respected and/or taken seriously by peers. Documentation is more difficult for faculty in these disciplines.

Find out how consulting, especially paid consulting, is viewed on your campus. Consultantships may count as service or as research. Some faculty view paid consultantships as adding little of value to your credentials; after all, you have received your reward (money). Others view the pay as an indication that your expertise is valued by others. Institutions sometimes put limits on the amount of time faculty may spend consulting for other agencies.

Be sure to keep records of service activities (and documentation if required by your institution), as they are easily forgotten—especially if they are one-time commitments. Service typically includes such things as working on university committees, work within the community that draws upon your expertise, working on a committee or serving as an officer of a professional organization, and reviewing or editing for professional journals. Serving on university committees provides the opportunity to meet faculty in other colleges and helps the faculty member become "known" on campus. Service to professional organizations may carry more weight, especially when it signals respect of fellow professionals, as does editing a journal. These opportunities are more apt to come to faculty who have a record of research and publication within their discipline.

Beware of traps in accepting service requests. The availability of service opportunities and the degree to which service is expected and valued varies a great deal. Some departments and colleges have a policy of protecting new faculty from service activities while tenured faculty are expected to assume the necessary service activities. However, one full professor reports that early in his career he systematically avoided as many service activities as possible and only accepted those he could turn into a publication opportunity. Another faculty member who joined the same department simultaneously accepted responsibility for administering a program for the department. The tenure and promotion review committees concluded she was performing vital service for the institution in an exemplary way and so tenured her but judged she had not published enough to warrant promotion. She was bitter about the decision, since she believed she had been placed in a situation that made it impossible for her to develop the credentials necessary for promotion. Some believe women's tendency to be nurturing makes them

more vulnerable to accepting service roles, contributing to the good of the department, that decrease their likelihood of developing credentials leading to tenure and promotion.

When preparing your credentials, do not overlook the fact that some persons reading them are not familiar with the traditions in your discipline. For example, if first authorship on a coauthored article signals that person has more responsibility for the work, state that in your credentials. If you have an invited paper that signals recognition by your fellow professionals, clarify this so that the significance of the event is not lost on the reader.

Finally, do not expect your life to change dramatically after you are granted tenure and promotion. Now is not the time to relax and cease to be productive. Don't forget how you felt about tenured faculty you viewed as unproductive and yet voted on whether you would be tenured and promoted. Habits such as scheduling time for research and writing should be seen as life-time commitments. If your department does not have several full professors you may experience increased pressures to do more institutional service once tenured and promoted. Do "your share" as it is your turn to protect the new faculty, but do not lose sight of working toward that next promotion.

Footnote

[1]One example is the Instructional Development and Effectiveness Assessment (IDEA) form published and scored by the Center for Faculty Evaluation and Development in Higher Education, 1627 Anderson Avenue, Kansas State University, Manhattan, KS 66502. The testing center at my university provides the forms to interested faculty, mails them in for scoring, and returns the printout of the results. Additionally, my former dean instituted a mid-semester evaluation patterned after that described in the following article: Scriven (1981). Summative teacher evaluation. In J. Millman (Ed.). *Handbook of teacher evaluation* (pp. 244-271). Beverly Hills: Sage.

College norms are available and continually updated with each new semester's data. The administration and scoring are handled by personnel other than the faculty member so accusations of tampering with the data or threatening students concerning their grades are out of the question.

Announcement

MWERA GOPHER

A Gopher server is under construction at Ball State University that will serve the Mid-Western Educational Research Association. The Gopher contains the CALL FOR PROGRAM PROPOSALS and will include the Annual Meeting Program, the Conference Abstracts, and various announcements. To access: HOST=gopher.bsu.edu PORT=70 SELECTOR=1/gopher-services/mwera

AERA TEP/SIG FORMING

An AERA Special Interest Group concerning the teaching of educational psychology is forming. An organizational meeting was held at AERA on Wednesday morning. For more information contact Greg Marchant, Educational Psychology, Ball State University, Muncie, IN 47306-0595. e-mail: 00gjmarchant@bsuvc.bsu.edu

MID-WESTERN EDUCATIONAL RESEARCH ASSOCIATION BUSINESS SECTION

1. Summary of Attendees' Evaluation of the 1993 MWERA Annual Meeting
Sharon L. McNeely, Member-at-Large

2. Request for Study Proposal
Richard C. Pugh, President

3. 1994 MWERA Annual Meeting Announcements
Gregory J. Marchant, Program Chair

4. Request for Nominations
Richard C. Pugh, President

5. Membership Application

Summary of Attendees' Evaluation of the 1993 MWERA Annual Meeting

Sharon L. McNeely, Member-at-Large

I have compiled information from the Annual Meeting session evaluation forms and talked with attendees to develop recommendations for MWERA. The overall evaluation concluded that Tom Andre and his various program committees did an outstanding job of selecting speakers and topics for the program. John Bransford, the opening keynote speaker, and Jere Brophy, the luncheon keynote speaker, were both highly rated for their presentations; many members requested that they be invited again. The other invited speakers were also highly rated. We hope that the invited speakers will consider continuing their involvement with MWERA as regular members.

Comments from attendees about our invited sessions suggest that we consider some new formats with invited speakers. These might include longer sessions for selected invited speakers, follow-up working sessions for attendees interested in more specific information, and changes in the luncheon speaker format so that the speaker presents in a room more conducive to presentation.

It seems that organizationally MWERA has reached a turning point. Our membership has been growing, as has conference attendance. We must now face choices about if and when and how we set limits. If we continue to have a program which seeks to maximize members' involvement and permits a number of presentations, then we will soon need to either add a day to our program or add to the number of sessions we offer at one time. Interestingly, many session evaluations had comments to limit the number of presenters and the number of sessions and to try to insure good quality.

Our growth was also felt in other ways. Many members commented that the hotel is becoming too small for our meeting. The costs and benefits of moving to another hotel will need to be discussed by the Board of Directors and the membership. Some speakers, session chairs, and session discussants were unable to attend and did not send alternates, or did not adequately prepare to speak. We need to recognize our obligation to have our papers prepared and duplicated for distribution, to time our presentations, to get papers to discussants on time, to have a backup presenter/discussant if we cannot make it, and to keep in mind that we are interfacing with a diverse, highly educated group of professionals. Many members expressed a concern that speakers recognize the cultural diversity of our attendees and be considerate of global issues in their presentations.

In 1990 and 1991, we had few Saturday morning sessions. They generally were well-attended, and attendees requested more of them. In 1992 and 1993, the programs featured more Saturday morning presentations. This year, those sessions were generally not well attended, and many were canceled or combined with other sessions. I'm not sure why this happened, and I hope you will share your ideas with the program chair, Greg Marchant, as the 1994 Annual Meeting is planned.

Historically, or at least over the last eleven years that I've been a MWERA member, MWERA was a starting point or a proving ground. For many, it provided a safe passage as students, young professionals, and professionals embarking into new territory used our sessions to develop

their ideas and "try out" before they went on to AERA and other national forums. Now, many of our members do not attend AERA, and our status as a professional organization has grown to the point that more and more of our members consider MWERA as their major forum for professional exchange. Somehow, we need to develop a middle ground, allowing for both ends of the spectrum without overloading our members with sessions. This year we had some poster sessions and some roundtable sessions, and both were highly rated. I'm hopeful that we will continue to experiment and find ways to meet the diverse needs of our members, and that you will continue to share your ideas with your elected officials.

Request for Study Proposal

The Board of Directors of the Mid-Western Educational Research Association (MWERA) is soliciting proposals to conduct a historical study of the Mid-Western Educational Research Association. At its mid-winter meeting, the Board of Directors approved an appropriation of $1000 for expenses related to data collection/analysis during the project.

While a historical study of the MWERA will take on the framework and form of the author(s) who conduct the study, there are essential elements of the study which the Board of Directors expect in any proposal. These elements will be used as criteria in judging the proposals and in a making the decision to have the study conducted.

A. Defining the focus. The proposal should include a definition of the subject of the inquiry. What is the organization? Why did the organization evolve? Beginning and ending points? When? Where? Here you should describe as precisely as possible what you will and will not be exploring in your study, leaving open the possibility of some shifts in focus as your study proceeds.

B. Providing a rationale. The proposal should contain a justification for undertaking the study. In the history of the MWERA, one must ask about aims, purposes, and intentions of the study. For example, providing an information base for the Association for future directions might be considered.

C. Scope of the study. A description of the kinds of evidence you will examine in conducting the study should be included in the proposal. Describe the method of collection and verification of data, major events and themes, and social/cultural contexts. If you expect to conduct oral interviews, indicate how you will go about the task. Indicate, for example, whether you will use a tape recorder to take notes; whether you will give the interviewer the chance to revise answers; procedures you will use to comply with standards on the use of human subjects. It would be helpful if you would name the people you currently expect to interview and indicate why you expect them to be able to provide relevant information.

D. Analysis and interpretation. Describe the methodology which you will use in the study. Justify your methodology in terms of the goals of the study and the availability of data. Indicate the limitations of the methodology and discuss the problems you might encounter.

You should limit your proposal to no more than five double-spaced typed pages. You should forward your proposal by May 1, 1994, to Richard C. Pugh, President of the MWERA, at the Wendell W. Wright Education Building Room 2072, Indiana University, Bloomington, IN 47405. An ad hoc committee consisting of Ayres D'Costa, Editor of the Mid-Western Educational Researcher; Charles Anderson, Executive Officer of the MWERA; and Richard Pugh, President of the MWERA, will review the proposals and make the final selection.

MWERA CALL FOR PROPOSALS, REVIEWERS, DISCUSSANTS, AND CHAIRS

The **CALL FOR PROGRAM PROPOSALS** appeared in the Winter issue of the ***MID-WESTERN EDUCATIONAL RESEARCHER***. It is also available on the MWERA Gopher (see Announcement on p. 19), by e-mail (00gjmarchant@bsuvc.bsu.edu), or writing or calling Greg Marchant. The Association is also looking for colleagues to review proposals, to serve as session chairs and discussants, and to consider serving as Division Chairs. Please contact the appropriate current Division Chair or Greg Marchant, 1994 Program Chair, Educational Psychology, Ball State University, Muncie, IN 47306-0595.

ANNOUNCEMENT

The Department of Leadership and Educational Policy Studies, College of Education, Northern Illinois University and Thresholds in Education Foundation are planning their Fourth Annual Research Symposium, Friday and Saturday, October 14 and 15, 1994, at the NIU campus. The theme will focus on "Education for Unity Within a Diverse Community: New Roles, New Relationships, New Responsibilities." Papers are being considered.

To submit a proposal or for more information, contact Byron Radebaugh, Program Chair, LEPS Department, NIU, DeKAlb, IL 60115, phone 815/753-9357; or 815/753-8750 (fax).

1994 MWERA ASSOCIATION ANNUAL MEETING

October 12-15, 1994
Bismarck Hotel, Chicago, Illinois

ANNOUNCEMENTS

Gregory J. Marchant, Program Chair

An Invitation

*P*lan now on being part of the 1994 annual meeting of the Mid-Western Educational Research Association by submitting a proposal for a paper presentation, symposium, workshop, or alternative format presentation. The MWERA annual meeting has been described as one of the most professional and collegial conferences of its kind. You will be presenting your research along with some of the most established names in education, as well as beginning researchers and graduate students. The conference is held in the Bismarck Hotel in downtown Chicago which offers quality accommodations and facilities at a reasonable price. This makes the MWERA conference an affordable enjoyable professional experience. Develop a proposal and encourage your colleagues and students to participate and attend.

CONFERENCE HIGHLIGHTS

This year's annual meeting is shaping up to be a very special event. Wednesday afternoon workshops will be followed by a very special evening panel discussion on motivation issues in education. One member of that panel, Lyn Corno, will be delivering the keynote address on Thursday morning. Thursday will also include a special panel on teacher education featuring Martin Haberman and Thomas Lasley. Publishers will be displaying their offerings in the Friday exhibits hall. Friday's luncheon speaker is Robert Slavin. Friday afternoon will include a workshop designed for graduate students on getting and keeping an academic position, panel discussions on minority issues in research and teacher education, and on issues in teaching educational statistics. Rick Pugh will deliver his Presidential Address on distance education, and a forum for education deans to discuss issues related to faculty research is scheduled for Saturday morning. Morning coffee, division meetings, a social, a fun run, and the President's reception round out the planned activities.

WEDNESDAY, OCTOBER 12
Workshop: Standards and Practices in Qualitative Research
Workshop: Research and Supervision in Teacher Education
Evening Panel Discussion: Motivation Issues in Education
Featuring: Lyn Corno, Teachers College-Columbia U.
Paul Pintrich, University of Michigan
Dale Schunk, Purdue University

THURSDAY, OCTOBER 13
Divisions C, D, & G Morning Coffee Meeting
Keynote: Lyn Corno, Teachers College-Columbia U.
Concurrent Sessions
Panel: Context Considerations in Teacher Education
Including: Martin Haberman, U. of Wisconsin-Milwaukee
Thomas Lasley, University of Dayton
Evening Social

FRIDAY, OCTOBER 14
Divisions B, E, F, I, & K Morning Coffee Meetings
MWERA Business Meeting
Luncheon Address: Robert Slavin, Johns Hopkins University
Exhibits
Workshop: Getting and Keeping an Academic Position
Panel on Minority Issues in Research and Teacher Education
Including: Jesus Garcia, University of Illinois
Barbara Shade, University of Wis-Parkside
Panel: Issues in the Teaching of Educational Statistics
Featuring: Robert S. Barcikowski, Ohio University
Stephen Jurs, University of Toledo
John Kennedy, Ohio State University
Joel Levin, University of Wisconsin
Isadore Newman, University of Akron
President's Reception

SATURDAY, OCTOBER 15
MWERA Fun Run
Divisions A, H, & J Morning Coffee Meetings
Presidential Address: Distance Education
Richard Pugh, Indiana University
Dean's Forum: Faculty Research
Paper and Symposium Sessions until noon

REQUEST FOR NOMINATIONS FROM PRESIDENT RICHARD C. PUGH

The *Mid-Western Educational Research Association* elects a new Vice President each year who subsequently becomes President-elect, President, and Immediate Past President for a four-year commitment of service to the Association. In alternate years the Association elects a new Member-at-Large for a two-year term. Approximately half of the MWERA Association Council members are elected each year for a two-year term. The Nomination Committee consists of the current President, the President-elect and the Immediate Past President with the President serving as Chair.

I invite you to participate in this important process by recommending the nomination of individuals who you consider qualified for these positions for 1995-96. They will be formally nominated during the annual meeting that is scheduled for October 12-15, 1994 and will be voted on during the spring of 1995. If elected, they will officially assume their roles at the annual meeting in October, 1995.

For your information in making your recommendations, the Association Bylaws state that only members in good standing may be nominated and hold elective office. The duties of the Vice President are numerous, including the very important responsibility of serving as the Annual Conference Program Chair in the year following election as Vice President. The Member-at-Large duties include the evaluation of the Annual Conference and serving as Chair of the Membership Committee. Association Council Members serve to review and approve all Association policy and take active roles in governance at all levels.

Recommendations for nominations should be addressed to me at the Wendell W. Wright Education Building, Indiana University, Bloomington, IN 47405 or by internet address PUGH@UCS.Indiana.Edu.

Recommendations for Nominees

Please print full names of recommended nominees

Office	Last	First	Middle Initial
Vice President			
Member-at-Large			
Association Council Member			

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1994 dues of $10 for students and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to*: Charles C. Anderson, Jr., MWERA Executive Officer, 1332 Southwind Drive, Northbrook, Il, 60062; phone (708) 564-4796.

MWERA Membership Application

Name (first, middle initial, last) _____

Mailing address _____

City _____ State _____ Zip _____

Home phone ( ) _____ Office phone ( ) _____

Highest degree: _____ Area of specialization: _____

Instituition Employer: _____

MWERA division preferences: _____

E-mail address: _____

AERA member? _____ Division(s): _____

If applying for student membership, please include a copy of your student ID.

Excerpts From "An Analysis of the Critiques of Multicultural Education" by Christine Sleeter, Invited Speaker for MWERA Divisions B and G at the 1993 Conference

Rose Mary Scott, University of Wisconsin-Parkside
Joan S. Timm, University of Wisconsin-Oshkosh

Dr. Christine Sleeter, a leading scholar in multicultural education, threw a challenge at her MWERA audience on Friday, October 15, 1993: A great deal of research and pedagogical resources have been developed in the field of multicultural education but these resources have yet to be connected to their various publics. She suggested that emphasis be given to disseminating these resources to receptive publics, such as the various organizations within communities of color, language minority publics, and certain feminist organizations. Because most multicultural education literature appears in scholarly journals, a concerted effort is needed to educate the broader public so that its concept is not distorted. Scholars and activists need to engage in more public relations work.

Dr. Sleeter reviewed the critiques of U.S. published books, articles, and editorials on multicultural education and reported that critics either opposed it as too radical (the conservative position) or opposed it as too conservative (the radical leftist position). The majority of the critiques come from the conservatives.

The conservatives write for a popular audience. The targets of their criticism are curricular changes and policies being instituted in schools and universities, Afrocentrism in general, and the revisions of core curricula on several university campuses. They make four charges: a) A radical fringe is bringing about changes in education and foisting new policies on a public they do not represent. b) Excessive emphasis on race and ethnicity is divisive; curriculum is the main concern of these conservatives. c) Much multicultural curriculum is intellectually weak; Afrocentrism is the main target of these conservatives. d) Multicultural education offers a poor critique of minority student achievement, replacing old-fashioned work with gimmicks such as self-esteem exercises.

Dr. Sleeter noted that the conservative critiques are weak for four reasons: a) They ignore the body of literature on multicultural education as well as a good deal of research and theory upon which it builds. This literature is produced largely by scholars of color, feminist, and critical scholars. b) They position themselves as spokespeople and advocates for both the broad American public in general and racial minority groups in particular. c) They offer little analysis of or reference to inequality today; rather, they frame their discussion mainly around unity versus dissension, instead of justice. They define equality only as equal rights of individuals before the law. d) They assume and state that their own viewpoints are apolitical, conceptualizing them as rooted in intellectual training that enabled them to rise above their own particular circumstances in order to make an assessment.

The radical left, on the other hand, criticizes multicultural education for embracing individual mobility within an economic hierarchy more than collective advancement and structural equality, and for reducing problems in the larger society to school solutions. They are particularly concerned about an emphasis on culture rather than on systems of oppression. Radical critics fault multicultural education for putting forth psychological solutions to political and social structural problems and for advocating reduction of teacher prejudice as a major solution to inequality. Also, they consider multicultural education to be a palliative White response to minority concerns that deflects attention away from structural issues, especially White racism. Dr. Sleeter reported that most of these radical critics write from outside the field and tend to oversimplify or dismiss the work of U.S. scholars of color. They do, however, point out some areas in which the field of multicultural education needs improvement. For example, theory and practice should focus on relationships among unequal groups in the U.S., and racial and ethnic terms should not be used interchangeably, because racial and ethnic theories of inequality are very different.

Dr. Sleeter noted that multicultural education means a shift in decision-making power over schooling away from dominant groups and toward oppressed groups, and involves more than program implementation. The potential of such a power shift to effect change is what has given rise to the barrage of conservative critiques. The complete text used for her address will be published in *Handbook of Research on Multicultural Education* (Macmillan, in press), edited by James A. Banks and Cherry A. McGee Banks.

The Responsibility Of Higher Education In Providing Leadership In The Restructuring And Renewal Of Public Schools: An Invited Address to the 1993 MWERA Conference

W. Gregory Gerrick, Ashland University

From an organizational perspective, public schools have evolved throughout our history by adapting, compounding and proliferating a corporate bureaucratic superstructure in a heroic effort to become all things to all students. In response, principles of organizational behavior are often interpreted by educators as methods of surviving within, and indeed justifying, this established organizational design. Concepts such as leadership, empowerment, site-based management, staff development and evaluation are routinely presented in college educational administration programs in terms of adapting to the "real world" of public schools rather than as opportunities to develop a more effective and appropriate institutional framework.

It may be argued that the organizational restructuring of schools has, in many ways, begun, and will continue for decades to come. It is likely that educators entering the profession in the 1990s will spend their entire careers absorbed in the ongoing transition inherent within the restructuring process. During this time of uncertainty and instability, educators must be prepared to re-examine and re-evaluate every facet of the bloated and dysfunctional bureaucratic structure which currently characterizes the nation's public school monopoly. Consider administrator and teacher preparation institutions in relation to public school reorganization. Should it be the role of higher education simply to react to the mandates of state and local boards of education or should they chart an independent course for the renewal of America's public schools?

It is clearly the responsibility of undergraduate and graduate programs in teacher education to prepare students to design the schools of the future. It is neither acceptable nor conscionable for colleges of education to promote and institutionalize the status quo in regard to curriculum, administration and leadership. Goodlad (1991) observes that teacher education programs lack a sense of mission and vision, and that educators have consistently failed to link school reform and teacher education both conceptually as well as in policy and practice. Representation of institutions of teacher education is conspicuously absent from restructuring proposals in both the public and private sectors. Colleges of education are both the logical and necessary focus for the clear establishment of credible leadership in the ongoing process of school restructuring. Educator preparation programs must orient their curriculum to recognize the present reality of the organizational renovation and renewal of public schools.

Fundamental to the notion of restructuring public schools is the understanding that piecemeal efforts at reform will have no lasting impact. By themselves, good ideas such as site-based management, school choice and empowerment do little to change the current organizational structure of public schools. As Chubb and Moe (1990) have demonstrated, it is only when the traditional institutions of democratic control - - the vested interests and multiple owners of public schools - - are broken down, that the subsequent autonomy of schools will give life to concepts such as choice, school-based management and the like. Colleges of education must take care to focus on the heart of the restructuring process - - replacement of an organizational structure based on democratic control - - and not attempt to promote individual programs, policies and models as panaceas in and of themselves. For many, this will require a radical change in the way public education is conceived in our society. Educator preparation programs can no longer sell remedies and quick fixes for a dying system and pass this off as "educational leadership."

The Teacher as Educational Leader

Definitions of educational leadership couched in the hierarchical bureaucratic framework of "command", "monitor" and "control" are anathema to schools of the future. In the context of rebuilding schools, a definition of educational leadership is inherently linked to the tenets of a professional or lateral organizational structure. Such a pluralistic power structure is broadly based throughout the school and dependent upon the expertise of individuals with various roles in the educational enterprise. It entails a considerable degree of autonomy coupled with a deep sense of moral and ethical commitment to the profession. In this context, leadership becomes the responsibility of each professional educator. Sergiovanni (1992b) talks of substitutes for leadership. Emphasizing moral authority, he views the school as a community in which a common culture of values and beliefs becomes the ethical authority for action on the part of professional educators. This focus allows teachers to become more committed and self-reliant. Consequently, principals are freed from what he calls the burden of trying to control people: the more professionalism is emphasized, claims Sergiovanni, the less control is needed.

It is clearly the mission of colleges of education to recognize that the process of restructuring of schools has

begun and to focus on the emerging and essential role of the teacher as educational leader. This is not to deny the reality of the presence of the bureaucratic structure that continues to characterize public elementary and secondary education. Colleges of education need to accept the transitional nature of an organization in flux, with one foot locked firmly in a corporate and political superstructure, and the other stepping gingerly into the professional experience - - in a sense, the already-but-not-yet.

A leadership model designed to enable educator preparation institutions to facilitate this process is offered as a potential strategy for graduate programs in educational administration and supervision. It is conceived essentially as a statement of mission and purpose relating to the rationale and philosophy of a graduate program in educational leadership. The model consists of the following components.

Leadership as a Vision

There is a great temptation to focus on skills and techniques of leadership to deal decisively with problems that arise in professional practice. A "bottom-line" society regularly seeks quick and uncomplicated solutions to complex problems. A program which focuses only on leadership "training" assumes that, for every situation which arises in practice, a pre-packaged response exists which can be taught to the beginning administrator. Often, programs in educational leadership unwittingly create the impression in students that there is a "right way" to behave as a principal or a superintendent. Such a narrow focus ignores the essence of true leadership: its vision or purpose provides the meaning for the skills, style and technique.

University programs cannot ignore the need for schools to prepare leaders to face the challenges of the present but, at the same time, they must play the leading role to help mold the future. They must prepare leaders who recognize that restructuring has indeed begun, leaders who communicate the meaning of what the school could be by establishing opportunities for faculty to experience and participate in a shared vision of a particular set of goals. Professionals ultimately will not accept as leader an individual who is unable to communicate an underlying rationale and purpose for his/her leadership agenda.

Within the human organization of the school, interaction among professionals is, first and foremost, relational. Sergiovanni (1992a) believes that professional and moral authority should be the source for developing and shaping policy instruments, strategies and practices in schools. Authority that is based on informed knowledge and personal expertise, and is derived from widely shared values, ideas and ideals, implies a vision of teaching as a collective practice. Leadership would then, according to Sergiovanni, emerge from within educators rather than be externally imposed, as with bureaucratic, psychological and technical-rational (scientific-based) authority.

Viewing the teacher as educational leader implies that educators accept a shared and common vision which frees teachers to serve the community of the school in the ways that each is most competent. To a great extent, this vision is limited by and, in essence, incompatible with the current organizational structure of public schools in that the requisite autonomy essential to this vision is severely compromised. The "vision" communicated by colleges of education must not only recognize present realities in educational settings, but also prepare reform-minded students capable of influencing future possibilities and contingencies.

Professionally Oriented Organizational Structure

The organizational structure of public schools is at the heart of the problem of their institutional effectiveness. A leadership model for educator preparation programs must focus on the logical development of a professionally oriented organizational structure. In this sense, leadership is conceived as the domain of all educational professionals, from classroom to boardroom. This form of lateral organizational structure necessitates cultivating leadership in each role within the educational process. The empowerment of educators as professional decision-makers is a natural consequence of this pluralistic power structure.

Since schools contain both bureaucratic and professional elements, an inherent conflict exists: traditional hierarchical authority and formal rules and regulations confound and frustrate efforts toward lateral and interdependent leadership roles. The response of management is often to present empowerment and professionalism as panaceas, suggesting that if only schools would also employ these principles, they would surely become effective schools. Consequently, implementation takes the form of imposing a watered-down version of these concepts on top of the existing hierarchical structure. Empowerment becomes delegating some additional authority, and professionalism becomes the new descriptor for the way administrators and teachers get along. Even the best ideas imposed on a faulty structure cannot produce the desired effect.

University programs must go one step further: they must stress the need for educators to challenge the overarching organizational structure of public schools in order to successfully implement these new leadership concepts. It is unlikely that individuals who benefit from positions of security and power within the organizational structure as it now exists will voluntarily initiate a fundamental change in the system. Such a transformation, if it is to occur, will likely begin to take shape from the bottom up - - from teachers, supervisors and building administrators who bring a different mindset to the workplace - - one which will gently but firmly, and over time, challenge traditional management assumptions. True professionals will behave as professionals, identify common values and beliefs, and empower others in the pursuit of their common goals. A professional organizational structure will gradually modify and ultimately replace the bureaucratic rigidity of the old order. Graduate and undergraduate programs need to integrate this mandate of renewal into every fabric of the

curriculum, no longer merely adapting or imposing change onto the existing system. Renewal implies the creation of a new organizational design, even if it is to evolve slowly, one program, one building at a time.

Systemic Renewal

The concepts of visionary leaders and a professional organizational structure are integral to any discussion of public school restructuring. Unless university programs in teacher education and educational leadership critically examine the overarching organizational structure of public schools - - the "system" itself, any discussion of or attempt at renewal is an exercise in futility. For decades, educators have been attempting to solve the problems of schools by superimposing every great idea that came along onto the same tired system. The heart of the problem - - the systemic cause - - has been ignored.

Holzman (1993) suggests that systemic change has at least five interpretations in popular usage. One interpretation defines systemic change as working with school systems, district bureaucracies and state departments of education to effect change. The assumption is that change must begin with existing bureaucratic structures. Systemic change, notes Holzman, can also mean working with every school in the system (horizontal approach), or working with every aspect of the school system (the interrelationships of all facets of school operations), or be "systematic" in nature (including both vertical and hierarchial structures as well as horizontal facets). Finally, he defines systemic change as fundamental change: the nature of the present system must be thoroughly redesigned recognizing that it can no longer accommodate necessary improvements in education.

O'Neil (1993), citing Michael Fullan and other scholars, notes that "... any strategy for systemic reform must emphasize the capacity of schools to renew themselves . . ." (p.11). Renewal extends beyond instructional and curricular reform. Renewal includes confronting the organizational aspects of the present system that inhibit the autonomy of professionals and prevent the development of programs and policies which truly represent the learning organization. It is one thing for colleges of education to promote curricular and instructional innovation and redesign. It is quite another for these institutions to provide leadership in examining organizational alternatives to the current public school colossus.

One of the best examples centers around the concept of site-based management and its relationship to public school organization. University programs in educational leadership often present site-based management as a reform strategy designed to involve teachers, administrators, parents, students and members of the community in shared decision-making in the operation of a specific school. Research on "effective schools" is cited as the justification for such an approach. To promote greater autonomy among professionals and thereby empower professional staff, site-based management plans are becoming increasingly popular at the school district level. While the theory behind this practice is that decentralization is preferable to centralized control, and that a site-based model of participatory management would enhance the freedom of teachers and administrators to do what they perceive is best for their student population; the practice itself, within the context of the current public school bureaucracy, tends not to bear out the promise of the theory. Here, the traditional institution remains intact. Individual schools remain under the authority of the local Board of Education of the State Board of Education - - of the many vested interest groups of the public school "organization." To assure that this new autonomy does not get "out of control," boards of education need to monitor how schools exercise their new freedom. According to Chubb and Moe (1990), a host of new rules, regulations and requirements are imposed on buildings operating under a site-based management plan. The underlying belief is that "as long as higher-level authority exists, it will eventually get used" (p. 201). Thus, management within a given school is never truly site-based.

In practice, then, site-based management simply becomes another way of maintaining control over schools within the same public school organizational structure. Spring (1993) notes that, in fact, site-based management is not intended to give any real power to teachers, students and members of the community. He believes that the political importance of site-based management would increase if individual schools were given the power to decide what students should learn and what the content of achievement tests should be. This brings us full circle to the original problem: if individual schools were truly autonomous, as Spring suggests, site-based management would become a viable and effective reform strategy. Yet without systemic change in the current public school bureaucratic superstructure, even the most well-intentioned reforms amount to little more than window-dressing.

Unless universities confront the issues of systemic change in public school organization, their programs serve to do little more than perpetuate the status quo of the public school monolith. It is possible that the close relationships forged between universities and public school districts, for the purpose of maintaining teacher and administrative field experiences, tend to discourage serious discussions of alternative public school designs. It is also possible that relationships between teacher and administrator preparation institutions and state departments of education, specifically in the areas of certification and requisite college courses, might dampen discussions of organizational change. As symbiotic as these relationships have become, their importance and significance pales when compared to the responsibility of educator preparation programs to assume the leadership for the ongoing redesign and renewal of public education: nothing less than a responsibility to the profession itself.

Design and support of charter school plans are examples through which colleges of education can provide leadership in organizational restructuring. A state grants

specific charters to individual schools. In turn, these schools are allowed to determine their own programs, and to maintain control over curriculum, personnel and specific goals. Professionals enjoy autonomy - - freedom from most state and local rules and regulations. In exchange, schools must demonstrate specific improvements over the previous system within which they were forced to operate. The potential for both organizational and instructional renewal is limitless. For genuine progress to be made, traditional power brokers, such as local and state boards of education, state legislators and state departments of education, must be willing to surrender control and thus empower education professionals to build the schools of the future.

Conclusion

University educator preparation programs, on both the graduate and the undergraduate levels, owe the profession nothing less than a leadership role in the redesign of American public education. The first step in this process is preparing educational leaders with a firm understanding of the nature of the public school organizational structure as it now exists. The potential for renewal is significantly enhanced as educators come to understand that the current bureaucracy is not a good organizational fit for schools.

Since sweeping, radical top-down organizational change is unlikely, effective efforts at institutional redesign will, in all probability, be implemented from the bottom up. The educational leaders of the future will fashion a professional organizational power structure from the ruins of the corporate model, methodically renewing one program, one building, one system at a time. They will define the purposes and cultures of their own learning communities, and thus enable the transformation of the school over time through a shared vision of common beliefs, norms, values and aspirations. Ultimately, they will institutionalize this vision into the organizational framework of the educational enterprise.

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Composition Analysis

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Bookstein's deduction that any distribution function reducing to $G(x + y) = G(y)$ or $H(x \times y) = H(x) \times H(y)$ will be resilient to aggregation ambiguity is applied to performance odds. The Rasch model application to three measurable compositions result. TEAMs work as unions of perfect agreement doing best with easy problems. PACKs work as collections of perfect DISagreements doing best with intermediate and hard problems. CHAINs work as connections of IMperfect agreements doing better than TEAMs with hard problems. Four problem/solution necessities for inference are reviewed: uncertainty met by probability, distortion met by additivity, confusion met by separability and ambiguity met by divisibility. Connotations, properties and applications of TEAM, PACK and CHAIN groups are ventured.

Why do some organizations succeed while others fail? Why do groups of a particular kind work well in some situations but poorly in others? The psychology of group organization is rich but qualitative (Freud, 1921). Questions about how groups work seem non-mathematical. Nevertheless, algebra undertaken to obtain hierarchically stable measurement leads to a mathematics of group productivity.

Groups are composed of subgroups, subgroups of elements, elements of parts. Aggregations separate into sub-aggregations and come together into super-aggregations. The "entities" we experience become understood and useful as we learn how to see down into their substructures and up into the compositions they construct.

We know from experience that the way group members work together affects group success. But we do not know how to measure these effects, nor how to calculate effective group organizations. Quantification requires models which measure group strength as functions of member strengths. These models must be hierarchically robust. They must maintain their metric across descending and ascending levels of composition. Can a mathematics be developed which defines the different ways group members might work together such that their individual measures can be combined mathematically to calculate an expected measure for the group?

Composition Analysis

"Composition analysis" is our name for the mathematics of how component measures combine to produce composite measures. Our deliberations will lead to measurement models which are infinitely divisible and, hence, inferentially stable. The models will compose and decompose smoothly from one level of aggregation to another. When the models work for groups of individuals, they will work for individuals within groups. When they work for individuals, they will work for parts within individuals. Although presented here as groups of persons, these models apply to groups of any kind: ideas, problems, cells.

Composition Rules

Bookstein (1992) shows that any distribution function that reduces to

$$G(x + y) = G(y) \text{ or } H(x \times y) = H(x) \times H(y)$$

will be indifferent to the intervals used for grouping and hence resilient to aggregation ambiguity. Bookstein's functions specify the divisibility needed for composition analysis. They also specify the arithmetic needed for quantitative comparisons. To relate these functions to the procedures of measurement, we enlarge the + and x arithmetic inside functions G and H to include "procedural" compositors $\oplus$ and $\otimes$. These procedural "additions" and "multiplications" represent whatever empirical procedures are discovered to operationalize measurement, as in "aligning sticks end-to-end" to "add" length, and "piling bricks top-to-bottom" to "add" weight.

Two composition rules follow:

A procedural Addition rule: $G(x \oplus y) = G(x) + G(y)$
A procedural Multiplication rule: $H(x \otimes y) = H(x) \times H(y)$

These rules compose and decompose ad infinitum, as in:

$$\begin{aligned} G(x + y + z) &= G(x + y) + G(z) \\ &= G(x + z) + G(y) \\ &= G(y + z) + G(x) \\ &= G(x) + G(y) + G(z). \end{aligned}$$

To discover the consequences for composition analysis, we will apply each rule to observation probabilities. Observation probabilities are addressed because we intend

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to use these rules on data in order to estimate measures for empirical compositions. These probabilities will be expressed as odds because $0 < P < 1$ is an awkward measure, while $0 < [P/(1 - P)] < \infty$ maintains equal ratios and log odds maintain equal differences. Our application of Bookstein's functions to odds will determine what compositions compositors $\oplus$ and $\otimes$ imply and hence what compositions are quantifiable.

Three compositions will result:

1. a TEAM union of perfect agreement,
2. a PACK collection of helpful DISagreements, and
3. a CHAIN connection of IMperfect agreements.

We will deduce measurement models for these compositions, which, because of their divisibility, are indifferent to composition level and resilient to aggregation ambiguity. The resulting models will be the stable laws of composition analysis.

Finally, we will place divisibility in the theory of inference which motivates these deductions, and will venture some interpretations of the three compositions.

The Measurement Model

In order to apply the composition rules, we need a stochastic measurement model, with parameters that follow the rules of arithmetic, and estimates that enable comparisons between strengths B_n and B_m of objects *n* and *m* which are invariant with respect to whatever relevant but necessarily incidental measuring agents are used to manifest the comparison.

Measurement means quantitative comparison. Quantitative comparison means differences or ratios. Since odds are ratios, ratios are their comparison. The procedural comparison $\oplus$ of objects *n* and *m* is:

$$H(n \oplus m) = H(n)/H(m)$$

Defining H as odds $[P/(1 - P)]$ gets:

$$[P_{n\oplus m}/(1 - P_{n\oplus m})] = [P_n/(1 - P_n)] / [P_m/(1 - P_m)]$$

Estimation requires that strengths B_n and B_m be manifest by a relevant measuring agent *i* of difficulty D_i. Inferential stability requires that the comparison $(B_n - B_m)$ be independent of task difficulty D_i.

The necessary and sufficient model is:

$$[P_{ni}/(1-P_{ni})][P_{mi}/(1-P_{mi})] = [\exp(B_n-D_i)] / [\exp(B_m-D_i)] = \exp(B_n - B_m)$$

because task difficulty D_i cancels so that the $n \oplus m$ comparison maintains the same difference of strengths regardless of which tasks are convenient to manifest these strengths (Rasch, 1960).

Three Compositions

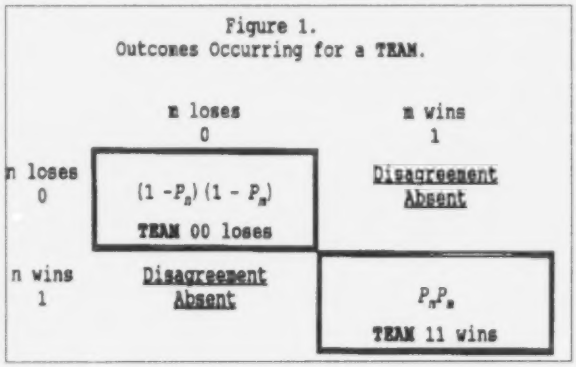
Team Union Of Perfect Agreement

Applying procedural multiplication to success odds defines group success odds, when group members work according to the procedural operator $\otimes$, as the following product of group member success odds:

$$\left(\frac{P_{n\otimes m}}{1 - P_{n\otimes m}}\right) = \left(\frac{P_n}{1 - P_n}\right) \times \left(\frac{P_m}{1 - P_m}\right) = \frac{P_n P_m}{(1 - P_n)(1 - P_m)}$$

The group composition specified by this first law of stable measurement can be seen by applying probabilities P_n and P_m to the outcomes possible when persons *n* and *m* work on a task according to the multiplication of their success odds. Figure 1 shows the two outcomes which occur in this composition.

Figure 1.
Outcomes Occurring for a TEAM.



Agreement **(11)** wins or agreement **(00)** loses. Disagreements **(10)** and **(01)** are absent because they do not occur in the equation which defines **TEAM** composition. TEAMs work as unions of perfect agreement.

Applying Rasch odds to TEAM work with group strength represented by $B_{n\otimes m}$ gets:

$$\exp(B_{n\otimes m} - D) = [\exp(B_n - D)][\exp(B_m - D)] = \exp[(B_n - D) + (B_m - D)]$$

Taking logs and generalizing to any size group defines N-member TEAM strength as:

$$(B_T - D) = \sum_n^N (B_n - D) \quad .$$

The strengths of TEAM members, relative to task difficulty $(B_n - D)$, add up to TEAM strength, relative to task difficulty $(B_T - D)$. TEAMs are **concatenations** of relative strengths, accumulated in linear form.

Pack Collection Of Perfect Disagreements

Applying procedural addition to success odds defines group success odds, when group members work according to the procedural operator $\oplus$, as the following addition of group member success odds:

$$\left(\frac{P_{n\oplus m}}{1-P_{n\oplus m}}\right) = \left(\frac{P_n}{1-P_n}\right) + \left(\frac{P_m}{1-P_m}\right) = \frac{P_n(1-P_m) + P_m(1-P_n)}{(1-P_n)(1-P_m)}$$

The group composition specified by this second law of stable measurement can be seen by applying probabilities P_n and P_m to the outcomes possible when persons *n* and *m* work on a task according to the addition of their success odds. Figure 2 shows the three outcomes which occur in this composition.

Figure 2.
Outcomes Occurring for a PACK.

	m loses 0	m wins 1
n loses 0	$(1-P_n)(1-P_m)$ **PACK 00 loses**	$P_m(1-P_n)$ **PACK 0 1 wins**
n wins 1	$P_n(1-P_m)$ **PACK 1 0 wins**	Agreement Absent

Helpful disagreements **(10)** and **(01)** win. Unhelpful disagreement **(00)** loses. Agreement **(11)** is absent because it does not occur in the equation which defines **PACK** composition. PACKs work as collections of perfect DISagreements.

Applying Rasch success odds to PACK work gets:

$$\exp(B_{n\oplus m} - D) = \exp(B_n - D) + \exp(B_m - D)$$

$$\text{or } \exp(B_{n\oplus m}) = \exp(B_n) + \exp(B_m) \ .$$

This is also a **concatenation**, but of absolute (not relative to problem difficulty) strengths, accumulated in exponential form.

Taking logs and extending to a group of any size defines N-member PACK strength B_p as:

$$B_p = \log\left(\sum_n^N \exp(B_n)\right) = \sum_n^N B_n/N + \log(NW) = \bar{B} + \log(NW)$$

$$\text{with } W = 1 + \sigma_B^2\left[\frac{1}{2} + \frac{\sigma_B\gamma_1}{6} + \frac{\sigma_B^2\gamma_2}{24} + \ldots\right] .$$

(For derivation see Appendix, p. 38.)

Log (NW) is the amount PACK strength increases with PACK size N and member heterogeneity W. W brings in member heterogeneity through member strength variance σ_B^2, skew γ_1, kurtosis γ_2, etc. Positive skew and kurtosis amplify the impact of stronger PACK members.

The homeostasis of most groups induces homogeneity. When heterogeneity emerges, members regroup toward homogeneity. As long as member strength variance σ_B^2 stays small, so that $\sigma_B < .3$ for $1 < W < 1.1$ or $\sigma_B < .5$ for $1 < W < 1.2$, then $W \approx 1$ and PACK strength can be modelled as:

$$B_p \propto \bar{B} + \log N \ .$$

The perfect disagreements of PACK members collect to benefit the PACK. As PACK size increases so does PACK strength. Unlike TEAMs, PACK strength is independent of task difficulty.

Chain Connections Of Imperfect Agreements

Applying procedural addition to failure odds defines group failure odds, when group members work according to the procedural operator $\ominus$, as the following addition of group member failure odds:

$$\left(\frac{1-P_{n\ominus m}}{P_{n\ominus m}}\right) = \left(\frac{1-P_n}{P_n}\right) + \left(\frac{1-P_m}{P_m}\right) = \frac{P_m(1-P_n) + P_n(1-P_m)}{P_n P_m}$$

The group composition specified by this third law of stable measurement can be seen by applying probabilities P_n and P_m to the outcomes possible when persons *n* and *m* work on a task together according to the addition of their failure odds. Figure 3 shows the three outcomes which occur in this composition.

Figure 3.
Outcomes Occurring for a CHAIN.

	m loses 0	m wins 1
n loses 0	More than one loss Absent	$P_m(1-P_n)$ **CHAIN 0 1 loses**
n wins 1	$P_n(1-P_m)$ **CHAIN 1 0 loses**	P_nP_m **CHAIN 11 wins**

Perfect agreement **(11)** wins. Disagreements **(10)** or **(01)** lose. Outcome **(00)** is absent because it does not occur in the equation that defines **CHAIN** composition. CHAINs work as connections of IMperfect agreements.

Applying Rasch failure odds to CHAIN work gets:

$$\exp(D - B_{n\ominus m}) = \exp(D - B_n) + \exp(D - B_m)$$

$$\text{or } \exp(-B_{n\ominus m}) = \exp(-B_n) + \exp(-B_m) \ ,$$

a **concatenation** of absolute weaknesses in exponential form.

Taking logs and extending to a group of any size defines N-member CHAIN strength B_c as:

$$B_c = -\log\left(\sum_n^N \exp(-B_n)\right) = \sum_n^N B_n/N - \log(NW') = \bar{B} - \log(NW')$$

$$\text{with } W' = 1 + \sigma_B^2\left[\frac{1}{2} - \frac{\sigma_B\gamma_1}{6} + \frac{\sigma_B^2\gamma_2}{24} - \ldots\right]$$

which member homogeneity simplifies to:

$$B_c \propto \bar{B} - \log N \ .$$

The imperfect agreements of CHAIN members are connected against the danger of harmful disagreement. Like PACKs, CHAIN strength is independent of problem difficulty. Unlike PACKs, as CHAIN size increases, CHAIN strength decreases.

Figure 4.
Outcomes for Three Member Groups.

	TEAM	PACK	CHAIN
WIN	Agreement 111	Helpful Disagreement 100,010,001	Agreement 111
LOSE	Agreement 000	Disagreement 000	Harmful Disagreement 011,101,110
ABSENT	100,010,001 110,101,011	111 110,101,011	000 100,010,001

Comparing Compositions

To see the differences among TEAMs, PACKs and CHAINs consider the possibilities for groups of three in Figure 4 and for groups of any size in Figure 5.

Figure 5.
Outcomes for Any Size Group.

	AGREE	DISAGREE
WINS	TEAM all 1's	PACK a single 1
LOSES	TEAM all 0's	CHAIN a single 0

or

	TEAM	PACK	CHAIN
all 1's	WINS	***	WINS
both 0's & 1's	*** ***	One 1 WINS	One 0 loses
all 0's	loses	loses	***

*** Absent

TEAMs are united in perfect agreement. Win or lose, no disagreement can occur. PACKs and CHAINs distinguish disagreement, but conversely. PACKs win by a single winning disagreement. CHAINs lose by a single losing disagreement. To help a TEAM, a member's strength must be stronger than problem difficulty. Members weaker than problem difficulty decrease TEAM strength. Adding to a PACK increases PACK strength. Adding to a CHAIN decreases CHAIN strength.

Figure 6.
Measurement Models for Composition Analysis.

TEAMs:	$B_T = D + \sum_{B}^{N} (B_B - D)$	$B_B > D$ helps
		$B_B < D$ hurts
PACKs:	$B_P = \log\left(\sum_{B}^{N} \exp(B_B)\right) = \bar{B} + \log(N)$	more N helps
CHAINs:	$B_C = -\log\left(\sum_{B}^{N} \exp(-B_B)\right) = \bar{B} - \log(N)$	more N hurts

The measurement models for composition analysis in Figure 6 enable us to deduce which of these compositions works best against problems of different difficulties.

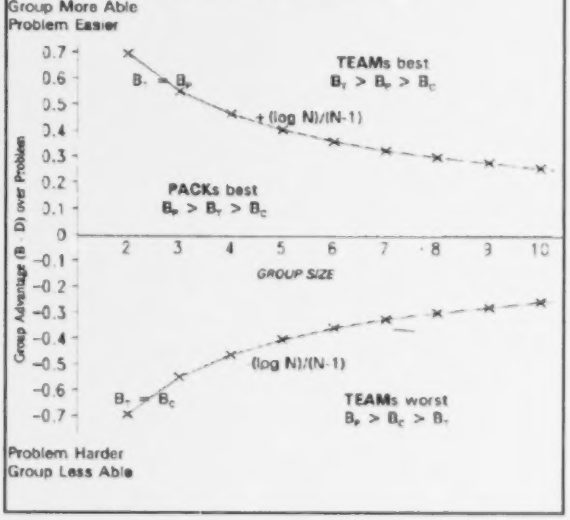
TEAMs vs PACKs. When is one, united TEAM agreement on what is best more effective than a collection of PACK disagreements?

Since $B_T = B_P$ when $(\bar{B} - D) = (+\log N) / (N-1)$,
$B_T > B_P$ requires $(\bar{B} - D) > (+\log N) / (N-1)$.

TEAMs do better than PACKs when average group strength is greater than problem difficulty by $[(+\log N)/(N - 1)]$. This defines the upper curve in Figure 7.

TEAMs vs CHAINs. When is TEAM organization better than CHAIN organization?
Since $B_T = B_C$ when $(\bar{B} - D) = (-\log N) / (N-1)$,
$B_T > B_C$ requires $(\bar{B} - D) > (-\log N) / (N-1)$.
This is the lower curve in Figure 7.

Figure 7.
PACK vs TEAM vs CHAIN Strength
by Group size and Problem Difficulty.



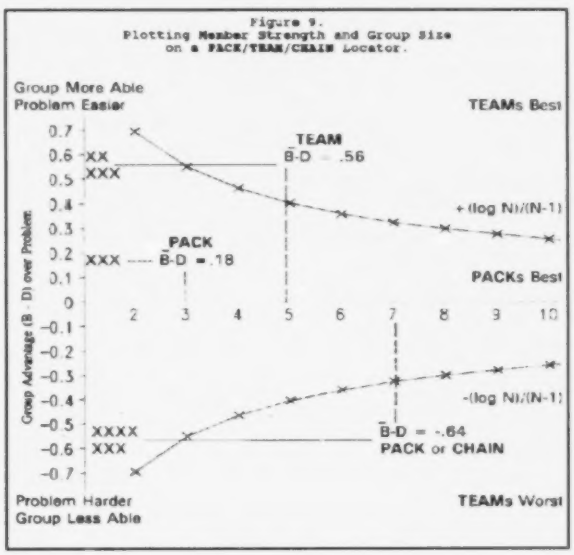
To read Figure 7, find group size N = 4 on the horizontal axis. Go up to the upper curve and left to the vertical axis to read that a group of four must average half a logit more strength than problem difficulty to do better as a TEAM than a PACK.

When problem D is harder than $[\bar{B} - (\log N)/(N-1)]$, PACK disagreement is more productive than TEAM agreement. As problem difficulty (D - B) increases, the value of TEAM work declines. The turning point at which PACKs become better than TEAMs is always greater than zero. Below (B - D) = (-log N)/(N - 1), a TEAM becomes the least productive group organization. Figure 8 formulates the relative strengths of TEAMs, PACKs and CHAINs.

Figure 8.
Relative Strengths of TEAMs, PACKs and CHAINs.

WHEN:	THEN:
$(+\log M)/(N-1) < (\bar{B} - D)$	$B_T > B_P > B_C$
$(-\log M)/(N-1) < (\bar{B} - D) < (+\log M)/(N-1)$	$B_P > B_T > B_C$
$(\bar{B} - D) < (-\log M)/(N-1)$	$B_P > B_C > B_T$

Figure 9 uses Figure 7 to show how relationships between problem difficulty, group size and group organization can be used to design optimal work groups. The upper group of five, averaging .56 logits more able than their problem, should work best in TEAM agreement. The middle group of three, averaging only .18 logits more able than their problem, should work better in PACK disagreement. The bottom group of seven, averaging .64 less able than their problem, however, encounter an



additional consideration. Optimal organization for this group depends on the cost/benefit balance between success and failure. When opportunity invites, PACK disagreements should be more productive. When danger looms, however, CHAIN commitment to maintain agreement may be safer.

Visualizing Group Mixtures.

When empirical measures B_G are estimated from group performance, we can see where each B_G fits on the line of TEAM, PACK and CHAIN compositions implied by its member measures $\{B_n \text{ for } n = 1,N\}$ by plotting B_G at:

$$X_G = (B_G - \bar{B}) / \log N \text{ and } Y_G = (B_G - B_T)/ \log N$$

in an XY-plot benchmarked by a TEAM, PACK, CHAIN line with intercept $(A_{ND}, 0)$, slope one and composition reference points:

$$X_T = (\bar{B}\text{-}D)\,[(N\text{-}1)/\log N] = A_{ND},\ Y_T = (B_T\text{-}B_T)/\log N = 0,$$
$$X_P = (B_P\text{-}\bar{B})/\log N = +1,\quad Y_P = (B_P\text{-}B_T)/\log N = +1\text{-}A_{ND},$$
$$X_C = (B_C\text{-}\bar{B})/\log N = -1,\ Y_C = (B_C\text{-}B_T)/\log N = -1 - A_{ND}.$$

Generalizing The Measurement Model

To expand probability $P = \frac{\exp(Q)}{1 + \exp(Q)}$ in Q, write its log odds $\log\left(\frac{P}{1-P}\right) = Q$. Subscripting P and (1-P) to P_1 and P_0 for $\log\left(\frac{P_1}{P_0}\right) = Q_1$ leads to $\log\left(\frac{P_x}{P_{x-1}}\right) = Q_x$, a Rasch model for any number of ordered steps: x = 1, 2, 3, . , m-1, m, ... , ∞ . This model constructs additive conjoint measurement from data obtained through any orderable categories: dichotomies, ratings, grades, partial credits indexing x_i and Q_{ix} to item *i*, comparisons, ranks, counts, proportions, percents...

We can use this model to articulate a variety of frequently encountered facets. To represent a measure for person *n*, we introduce person parameter B_n. To produce an observable response x_{ni}, we provoke person *n* with item *i* designed to elicit manifestations of the intended variable. To calibrate item *i*, and so construct a quantitative definition of the variable, we introduce item parameter D_i. To calibrate the resistance against moving up in item *i* from category x-1 to x, we add item step parameter F_{ix}. With D_i and F_{ix} in place, we can estimate test-free person measures which, for data which follow the model, are stable with respect to item selection.

When person *n* responds directly to item *i*, producing response x_{ni}, we can collect x_{ni}'s over persons and items and construct person measures on the item-defined variable. But, when persons are observed through performances which are not self-scoring, then we need a rater *j* to obtain rating x_{nij} of person *n*'s performance on item *i*. But we know that even the best trained raters vary in the way they use rating scales. To calibrate raters, we add rater parameter C_j. With C_j in place, we can estimate rater-free, as well as test-free, person measures which, for data that fit, will be stable with respect to rater selection as well as item selection.

As comprehension of the measurement context grows, we can add more facets, a task parameter A_k for the difficulty of the task on which person *n*'s performance is rated by rater *j* on item *i* to produce x_{nijk} and so on.

In order to obtain inferential stability [Fisher sufficiency (1920), Thurstone invariance (1925), a stochastic Guttman scale (1944), Rasch objectivity (1960), and Luce and Tukey conjoint additivity (1964)] we need only combine these parameters additively into a many-facet model (Linacre, 1989) such as:

$$\log\left[\frac{P_{nijkx}}{P_{nijkx-1}}\right] = Q_{nijkx} = B_n - D_i - C_j - A_k - F_{ix},$$

where B_n is the person parameter, D_i is the item parameter, C_j is the rater parameter, A_k is the task parameter and F_x is the item step parameter.

Compositions can be studied in any facet of a many-facet model. Consider:

$$\log\left[\frac{P_{nijk1}}{P_{nijk0}}\right] = Q_{nijk1} = B_n - D_i - C_j - A_k ,$$

Figure 10.
Facet Measures for TEAMs and BLOCKs.

Group Type	Measurement Model
Person TEAM n = 1,...,N	$B_n = \bar{B} + (N-1)(\bar{B} - D - C - A)$
Item BLOCK i = 1,...,L	$D_i = \bar{D} - (L-1)(B - \bar{D} - C - A)$
Rater TEAM j = 1,...,M	$C_j = \bar{C} - (M-1)(B - D - \bar{C} - A)$
Task BLOCK k = 1,...,H	$A_k = \bar{A} - (H-1)(B - D - C - \bar{A})$

rewritten for x = 0,1 to simplify presentation. The measurement models for TEAMs of animate elements, persons and raters, and for BLOCKs of inanimate elements, items and tasks, are listed in Figure 10.

For TEAM and BLOCK measures to increase with group size, the average measure of the grouped facet must exceed:

$$\bar{B} > D + C + A \qquad \bar{D} > B - C - A$$
$$\bar{C} > B - D - A \qquad \bar{A} > B - D - C$$

The PACK and CHAIN formulations in Figure 11 are simpler. For PACKs and CHAINs the levels of other facets do not matter. More persons make person PACKs stronger, but person CHAINs weaker. More items, raters or tasks make PACKs easier to satisfy, but CHAINs more difficult.

Figure 11.
Facet Measures for Homogeneous PACKs and CHAINs.

	PACKs	CHAINs
Persons	$B_p = \bar{B} + \log(N)$	$B_c = \bar{B} - \log(N)$
Items	$D_p = \bar{D} - \log(L)$	$D_c = \bar{D} + \log(L)$
Raters	$C_p = \bar{C} - \log(M)$	$C_c = \bar{C} + \log(M)$
Tasks	$A_p = \bar{A} - \log(H)$	$A_c = \bar{A} + \log(H)$

Necessities For Inference

Four problems interfere with inference:

Uncertainty is the motivation for inference. We have only the past by which to infer the uncertain future. Our solution is to contain uncertainty in probability distributions which regularize the irregularities that disrupt connections between what seems certain now but must be uncertain later.

Distortion interferes with the transition from data collection to meaning representation. Our ability to figure out comes from our faculty to visualize. Visualization evolved from the survival value of safe body navigation. Our solution to distortion is to represent data in bilinear forms that make the data look like the space in front of us. To "see" what experience "means", we "map" it.

Confusion is caused by interdependency. As we look for tomorrow's probabilities in yesterday's lessons, interactions intrude and confuse us. Our solution is to force the complexities of experience into few enough invented "dimensions" to make room for clear thinking. The authority of these fictions is their utility. We will never know their "truth". But, when our fictions "work", they are usually useful.

The logic we use to control confusion is enforced singularity. We investigate the possibilities for, define and measure one dimension at a time. The necessary mathematics is parameter separability. Models which introduce putative "causes" as separately estimable parameters are the founding laws of quantification. They define measurement. They determine what is measurable. They decide which data are useful, and which are not.

Ambiguity is the fourth problem for inference. We control hierarchical ambiguity by using measurement models which embody divisibility.

Bookstein's functions: $H(x \times y) = H(x) \times H(y)$ and $G(x + y) = G(x) + G(y)$ for resilience to aggregation ambiguity contain the divisibility necessary to stabilize quantitative inference (Feller, 1966). They also contain the parameter separability and linearity necessary to alleviate confusion and distortion. Models which follow from Bookstein's functions implement:

1. the concatenation and conjoint additivity which Norman Campbell (1920) and Luce and Tukey (1964) require for fundamental measurement,

2. the exponential linearity which Ronald Fisher (1920) requires for estimation sufficiency and

3. the parameter separability which Thurstone (1925) and Rasch (1960) require for objectivity.

The measurable compositions are TEAMs, PACKs and CHAINs. The measurement models necessary and sufficient for quantitative composition analysis are linear mixtures of the Rasch models for measuring these

compositions. Figure 12 summarizes the problems of inference and their current solutions. The prevalence, history and logic of the addition and multiplication rules establish the Rasch measurement models as the necessary and sufficient foundations for measurement. Models which contradict the inferential necessities of: probability, linearity, separability and divisibility, cannot survive the vicissitudes of practice. Only data which can be understood and organized to fit a Rasch model can be useful for constructing measures.

Figure 12
Foundations of Inference

PROBLEMS	SOLUTIONS	PARENTS
UNCERTAINTY have => want now => later statistic =>parameter	**PROBABILITY** distribution regular irregularity misfit detection	Bernoulli 1713 De Moivre 1733 Laplace 1774 Poisson 1837
DISTORTION non-linearity unequeal intervals incommensurability	**ADDITIVITY** linearity arithmetic concatenation	Luce/Tukey 1964 Fechner 1860 Helmholtz 1887 N. Campbell 1970
CONFUSION interdependence interaction confounding	**SEPARABILITY** sufficiency invariance conjoint order	Rasch 1960 R. A. Fisher 1920 Thurstone 1925 Guttman 1944
AMBIGUITY arbitrary grouping ambiguous hierarchy	**DIVISIBILITY** stability reproducibility	Kolmogorov 1932 Levy 1924 Bookstein 1992

For Bernoulli, De Moivre, Laplace and Poisson see Stigler (1986).
For Kolmogorov and Levy see Feller (1966).

Connotations, Properties And Stories

Mathematics leads to three reference compositions which empirical composites must mix to be measurable. We can use group member measures to calculate TEAM, PACK and CHAIN expectations. We can use these expectations and empirical group measures to study TEAM/PACK/CHAIN mixtures. So much for mathematics. What can TEAMs, PACKs and CHAINs say about everyday life? How might we bring these mathematical ideas to practice as useful formulations for better living? Can these abstractions help us manage our infinitely complex experiences with living compositions, hierarchies of functioning, families of ideas and tasks? Can we construct maps by which to "see" how the compositions of which we are, by which we think and within which we live, might be better worked? Figure 13 lists some connotations which TEAMs, PACKs and CHAINs bring to mind. Figure 14 lists some properties which they imply. We end with some stories in which these compositions might participate.

Figure 13.
Connotations of TEAM, PACK and CHAIN.

	SAFE SURE	DANGEROUS UNSURE
AGREE	**TEAM** government formality convention	**CHAIN** survival security discretion
DISAGREE	**PACK** science opportunity invention	chaos anarchy

	TEAM	PACK	CHAIN
WIN	virtue satisfaction justice	pride triumph progress	safety relief security
LOSE	guilt indignation worry	shame frustration disappointment	fear recrimination despair

Football. When a TEAM of players huddle to call a play, win or lose, they intend to act united. Should one of them err, this will hurt the TEAM. TEAM success is jeopardized by weak links in its CHAIN of players.

Lost Keys. What is the best way to look for a lost key? Should we all agree to look in the same place? Or, should we all agree to disagree as to where to look and spread out?. Each in a different place has the better chance of success. PACK work is the way to look for lost keys.

Figure 14.
Properties Implied by TEAM, PACK and CHAIN.

TEAM	PACK	CHAIN
unite	collect	connect
consolidate	accumulate	protect
evaluate	explore	preserve
unify	discover	secure
agree	attack	defend
uphold ground	gain ground	guard ground
capitalize consensus	optimize difference	survive together
play safe	take chance	hang on
smug secure	daring hopeful	cautious worried
virtue disapproval	pride shame	safety danger
usual events	rare events	dangerous events
easy problems	hard problems	risky problems
successful jury	missing key	mountain climbing

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Mountain Climbing. Climbers rope for safety. As one climbs, everyone else hangs on. Then, should a climber slip, his anchored mates may be able to save him. When, however, a supposedly anchored mate is not hanging on or moves out of turn, then all may fall. CHAIN work is the way to climb mountains.

Cops and Robbers. When a crime is reported, the perpetrator is often unknown. Solving the problem begins hard. PACKs of detective TEAMs fan out to search of suspects. As evidence accumulates, however, deciding who is guilty becomes easier. The PACK of TEAMs converges in their solutions to one TEAM agreement and detains the most likely suspect.

Should the suspect go to trial, judgement will depend on a jury TEAM decision. But, if a contrary jurist holds out, the jury TEAM may become a failing CHAIN.

A Common Source of Misapprehension. A weak shooter, in solitude, misses repeatedly. But then, in sudden company, is seen to hit on what is now his Nth try. His PACK ability: $B_{PN} = B + \log N \Rightarrow B_{P1} = B' + \log 1 = B'$, when only his finally successful shot is seen, will appear to be the ability B' of a stronger shooter who hits on his first try.

A strong shooter, in solitude, hits repeatedly. But then, in sudden company, is seen to miss on what is now her Nth try. Her CHAIN ability: $B_{CN} = B - \log N \Rightarrow B_{C1} = B'' - \log 1 = B''$, when only her finally unsuccessful shot is seen, will appear to be the ability B'' of a weaker shooter who misses on her first try.

Solving Problems. When problems are easy, TEAMing ideas into one course of action should work best. When problems are hard, however, putting every egg in a single basket may not be as productive as deploying a PACK of diverse undertakings. When a mistake is fatal, however, then PACK diversity risks CHAIN weakness.

FOR APPENDIX, SEE PAGE 38.

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Book Review

by Ayres D'Costa, The Ohio State University

Sato, Takahiro (1987). **Introduction to educational information technology.** Kanagawa, Japan: NEC Corporation.

The book reviewed here is an English language translation of this 1987 publication in Japanese. It was edited by Delwyn L. Harnisch (University of Illinois at Urbana-Champaign) and Michael L. Connell (University of Utah at Salt Lake City) in 1990. Currently out of print, it will soon be available from NEC Technical College, NEC Corporation, 1753 Shimonumabe, Nakahara-ku, Kawasaki, Kanagawa, 211 Japan. Inquiries may be directed to Delwyn Harnisch, Dept. of Ed. Psychology, University of Illinois at Urbana-Champaign, 51 Gerty Dr., Champaign, IL 61820.

Sato's book is divided into two Parts, with Part I presenting four chapters dealing with the history and principles of educational technology; and Part II focusing on some novel Response-Analysis techniques, including Student-Problem (S-P) Chart Analysis. The two Parts would appear unrelated to most readers, and the whole book somewhat weak in format because Part II is essentially a compilation of relevant papers presented by Sato on different occasions.

To this reviewer, however, this book presents a life-long creative effort by Sato to demonstrate and to make available to classroom teachers the information management power of computers. He compares teachers to system engineers who must make consumer needs their starting point, and then "engineer" available materials resources and operational techniques to serve these needs. A teacher likewise must first identify her/his students' learning needs and then adapt instructional content and the educational resources to these needs. In keeping with prevailing educational technology beliefs in the U.S., Sato recorded his impassioned plea years ago in Part I that the computer be utilized as an instructional tool instead of as a teacher substitute.

Although S-P analysis is based on non-traditional psychometric theory and an adroit use of computers, the concepts underlying it are remarkably simple to the point of appearing simple-minded. Sato first developed a Response-Analyzer for teachers in 1963. This system consisted of a keyboard for each student networked to a console at the teacher's desk. After each teaching unit the teacher administers a short multiple-choice test to the students. They respond at their keyboards, and then "the meters and the digital counters at the teacher's console indicate what percentage of the class is responding to each of possible alternatives". The S-P Chart Analysis technique was developed to help teachers use these types of data regarding students and problems to improve learning and teaching.

To understand the S-P Chart Analysis requires one to develop a Matrix (Students X Problems) with 0s (indicating wrong response) and 1s (indicating correct response). The Students are arranged by descending order of their Total Score in the rows of this Matrix, whereas the Problems (Items) are arranged by ascending order of their difficulty in the columns of the Matrix. The Sato Caution Index is then computed for each Student and Problem. This Index utilizes a "Guttman-scaling" concept. The student is theoretically expected to answer correctly the first T items in this Matrix, where T is the Total Score of the student on the test. To the extent that the Student misses (answers wrongly) these first T problems, or answers correctly problems beyond the first T, then Sato postulates that the performance is "anomalous" and the teacher needs to be cautioned about this student. A similar kind of thinking results in the computing of the Sato Caution Index for each Problem.

The S-P Chart analysis techniques developed by Sato have been introduced in the United States by Harnisch (1983) who developed a special computer package to help teachers use the S-P Chart technique. Several articles have since appeared in the measurement literature justifying its mathematical premises (Tatsuoka & Linn, 1983); demonstrating its use in counseling (Dinero & Blixt, 1988); applying it to train judges engaged in a standards-setting task (Jaeger, 1988); and extending it to define two new caution indexes (D'Costa, 1993). Sato has presented his techniques to several international audiences. However, what is a glaring deficiency to-date is the lack of its discussion in current measurement text-books. This book will serve to draw attention to this deficiency. It has most of the ingredients that need to be presented in an introductory text. This reviewer recommends this book as a required reading for prospective classroom teachers in an introductory or intermediate educational measurement course.

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APPENDIX to Composition Analysis (Wright) on page 29.

CHAIN & PACK DERIVATIONS

Derivation of PACK and CHAIN measure approximations from their exponential (ratio) parameter definition.

PACK definition:

$$b_p = \sum_1^N b_i - \bar{b} \sum_1^N (b_i/\bar{b})$$

where $b_p = \exp(B_p)$ $\bar{b} = \exp(\bar{B})$ $b_i/\bar{b} = \exp(B_i - \bar{B})$

so that $$B_p = \bar{B} + \log\left[\sum_1^N \exp(B_i - \bar{B})\right] .$$

Since

$$\exp(B_i - \bar{B}) = 1 + (B_i - \bar{B}) + (B_i - \bar{B})^2/2 + (B_i - \bar{B})^3/6 + \ldots ,$$

$$\sum_1^N \exp(B_i - \bar{B}) = N\left[1 + \sigma_B^2/2 + \sigma_B^3\gamma_1/6 + \sigma_B^4\gamma_2/24 + \ldots\right] = NW$$

PACK measure becomes

$$B_p = \bar{B} + \log(NW) = \bar{B} + \log(N) \quad as \quad \sigma_B = 0 .$$

CHAIN definition:

$$1/b_c = \sum_1^N (1/b_i) - (1/\bar{b}) \sum_1^N (\bar{b}/b_i)$$

so that $$B_c = \bar{B} - \log\left[\sum_1^N \exp(\bar{B} - B_i)\right] .$$

Since

$$\exp(\bar{B} - B_i) = 1 + (\bar{B} - B_i) + (\bar{B} - B_i)^2/2 + (\bar{B} - B_i)^3/6 + \ldots ,$$

$$\sum_1^N \exp(\bar{B} - B_i) = N\left[1 + \sigma_B^2/2 - \sigma_B^3\gamma_1/6 + \sigma_B^4\gamma_2/24 - \ldots\right] = NW'$$

CHAIN measure becomes

$$B_c = \bar{B} - \log(NW') = \bar{B} - \log(N) \quad as \quad \sigma_B = 0 .$$

Voices in Education

Marlene Schommer
Wichita State University

I have been honored to take over the VOICES column for the next few issues. VOICES was originally conceived and developed by Greg Marchant and I thank him for his insightful groundwork.

As a new editor of this column, I have decided to develop the potential depth that VOICES may provide for the MWER readership. Veteran leaders of education, as well as newer leaders, have been asked to respond to timely questions. In order to provide more substantial answers, they have been allowed to give longer reactions to the questions. I trust that you will appreciate the time and thought that these individuals have put into responding. As you will see from their responses, the advice to junior faculty is diverse. MWER indicates a related article by Orpha Duell (p. 15) and welcomes readers' reactions.

Leaders in education were asked the following questions:

a. What are the most common mistakes junior faculty make?

b. What suggestions can you give to junior faculty members with regard to balancing teaching, research, and service?

****

The most common mistake of junior faculty (and sometimes of the people who evaluate them!) is to be so concerned about doing that they don't have time to be concerned about thinking about what they are going to do. Scientists and educators are evaluated on the impact of their work. Ultimately, what matters is how much of a contribution you make to a field, not how many papers you've published or how many classes you've taught. Junior faculty ought to concentrate on deciding where they have the greatest contribution to make, and then go about trying to make that contribution.

Robert J. Sternberg
Yale University

****

Some junior faculty seem to believe that we have an expectation that they will not qualify for tenure. This is not true. We are extremely careful in screening candidates we hire, and beginning assistant professors are brought in on the assumption that they will be able to meet conditions necessary for them to be tenured and promoted. I wish there were some way to diminish what I perceive to be excessive fears on the part of untenured new faculty about their "survivability." Sometimes these worries interfere with their work. To help them put their situations in perspective, we now assign a senior professor to work as a mentor with our new people.

A few junior faculty seem to think that publications is simply a numbers game. We are interested in our people developing a line of inquiry in a fairly focused area. When this happens, knowledge agglutinates and has potential to influence the work of the entire community of scholars. We are much more interested in seeing published work reflecting careful thought and research in a single area than in seeing many publications on disparate topics that simply "fail to hang together."

New professors need to understand that in looking for balance among teaching, research, and service, the unit of analysis is the college, not the individual professor. Some professors have more strengths in some of the areas than in others, and that is all right. In our institution, it sometimes has been the case that newcomers have become too involved in the service area. Initially, we would rather have them concentrate on developing expertise in research and teaching. We would hope for more service-oriented activities after they have qualified for tenure. This certainly does not mean that untenured professors should not engage in service work. Rather, we simply feel that, in choosing to allocate their time, more initially should go to research and teaching.

David G. Armstrong
Texas A&M University

****

The single biggest mistake that junior faculty members can make is to not recognize and respect the goals of the institution they join. For example, an individual who wants to develop an active program of research should go to an institution that is supportive of research. Similarly, an individual who wants to devote all of his/her energies to excellence in teaching should go to an institution with heavy teaching loads and little investment in research. Obviously, any faculty member must strive for excellence in both teaching and research, the problem is one of relative emphasis.

Andrew C. Porter, Director
Wisconsin Center for Education Research

****

The most common mistakes junior faculty make are not asking useful questions about priorities at their institutions and taking on too much at the request of various administrations. Either because of arrogance or naiveté many junior faculty feel that they know "all the answers" or that they ought to know them. By admitting their ignorance, they feel that they will be seen as poorly prepared or unprofessional. Thus, they may make mistakes that may

cause their peers to indeed view them as poorly prepared or unprofessional.

The best solutions for such difficulties is the use of peer mentors -- senior faculty who can provide answers and help junior faculty in the setting of priorities. Junior faculty who have been at an institution a few years can also be useful mentors since they only recently were in need of the same guidance and may better be able to anticipate needs and questions.

Only senior faculty, however, can provide credible guidance in the tenure and promotion process, the use of institutional memory, and insights into the uses of power in the university. Thus, a mentoring team of a senior and "long term" tenure-track junior faculty member may be the best solution to overcoming the common mistakes of junior faculty.

Murray R. Nelson
The Pennsylvania State University

****

My experience as a faculty member (8 1/2 years) does not allow me to describe what I think are the most common mistakes because of a lack of information. As a faculty member who recently shifted from junior to senior faculty status, now being a tenured associate faculty member, I will describe some of the mistakes I made that I would hope other faculty would avoid.

1. Do not expect to receive mentoring. One can wait a long time in hopes that a senior faculty member will volunteer to serve as a mentor. On our campus, senior faculty members tend to be heavily involved in university service activities and do not have the time or energy for mentoring.

2. Keep your research focus. Becoming involved in projects initiated by senior faculty may not ultimately be what is of interest and may not provide any reward. I expended vast amounts of time and energy on several projects early in my career that resulted in no scholarly work.

3. Avoid campus politics. Many senior faculty derive their professional rewards (and perhaps their meaning in life) from involvement in campus politics. Much time and energy can be expended in this domain and one ultimately learns that universities change very slowly, so the energy seems wasted.

4. If you are productive in the scholarly domain, expect to encounter jealousy and accusations of preferential treatment by senior faculty.

5. Do not volunteer to teach additional loads or take on unnecessary new course preparation until your research program is established. Teach well within your expertise and don't broaden your teaching repertoire early in your career unless necessary to help your department.

6. Establish professional contacts within the neighboring communities. They help one maintain a "real world" perspective and are extremely helpful with research projects.

7. Request monies for necessary research materials. Go to the dean, if necessary.

Chuck Romig
Wichita State University

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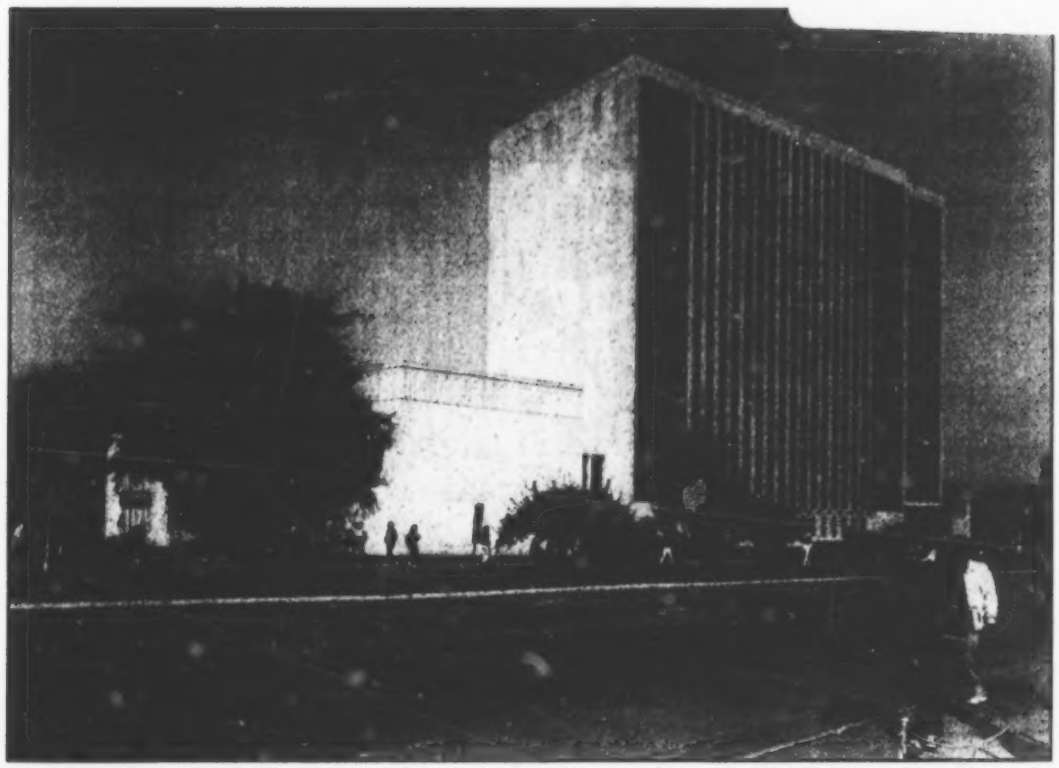

Ball State University, Muncie, IN

Special Program Issue

October 12-15, 1994

Welcome to *your* annual meeting! It truly is your annual meeting since well over half of our membership will be convening in Chicago. The Mid-Western Educational Research Association prides itself as a professional organization that is collegial and supportive of its members. The annual meeting is the place to meet respected leaders, see new faces, and hug old friends. This year will be no different as well-known leaders from across the country join students, teachers, administrators, faculty, friends, and other professionals to share ideas and research. As you page through this program I think that you will find a good mix of invited speakers and quality presentations from your colleagues.

I want to thank all who have contributed to our annual meeting. First, I would like to mention my gratitude to our invited speakers. These well-known leaders in education epitomize the best in academia. Keeping our Association and conference affordable means limited finances for travel and speakers' fees. Our speakers are serving us for a fraction of what they deserve. Please take the time to thank them for being friends of MWERA and sharing their time and expertise. I want to express my personal thanks to Allyn & Bacon publishers for once again lending me a hand and for supporting MWERA. Those who submitted proposals, whether accepted and not, have shaped this conference and have put the process to the test. Tough decisions needed to be made this year in selecting proposals. Our Division Chairs and reviewers have done an excellent job. The Associate Program Chairs have helped put this conference together and will be lending a hand along the way. The Board of Directors and the Editors of the *Mid-Western Educational Researcher* have provided support and displayed patience and understanding in the development of this program.

The most important element necessary to the success of this year's Annual Meeting is just now taking shape; that involves you, the students, the teachers, and our colleagues who will be registering for and attending this year's conference. You will be attending workshops and sessions, listening to and making presentations, asking questions and adding insights, providing support and direction for your colleagues, and coming together as the Mid-Western Educational Research Association.

Greg Marchant
MWERA '94 Program Chair

ON THE COVER

Ball State University was founded as a state institution in 1918. The institution became an extension of Indiana State University before becoming Ball State Teachers College, and in 1965 became Ball State University. The 955-acre residential campus includes 58 major buildings. Historically, its mission has focussed on the preparation of teachers, becoming one of the nation's largest grantors of professional education degrees. Emphasis on teaching continues today, as the university strives to become widely known as a "premier teaching university" where the education of teachers is an all-campus responsibility.

Ball State's Teachers College houses seven departments: Burris Laboratory School (the only lab school in the state); Counseling Psychology and Guidance Services; Educational Leadership; Educational Psychology; Elementary Education; Secondary, Higher and Foundations of Education; and Special Education. The Teachers College also oversees the Indiana Academy for Science, Mathematics, and Humanities (a two-year residential school for 200 gifted and talented high school juniors and seniors). The Teachers College has an enrollment of approximately 3,000 undergraduate students and over 650 graduate students. It offers accredited programs leading to Bachelor's, Master's, Specialist, and Doctorate degrees.

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Reseracher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

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Volume 7, No. 3 Summer 1994

Program Committee and Board of Directors 2

Association Council and Proposal Reviewers 3

How to Get to the Conference 4

Registration Form 5

Events and Information 6

Explanation of Program and Sessions 7

Conference Schedule:

Wednesday
- Wednesday Matrix 8
- Wednesday Workshops 9
- Wednesday Evening Motivation Session 11

Thursday
- Thursday Matrix 12
- Thursday Sessions 13

Friday
- Friday Matrix 24
- Friday Sessions 25

Saturday
- Saturday Matrix 33
- Saturday Sessions 34

Participant Index 38

Subject Index 42

Participant Addresses 45

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Donald Reyes, *Northern Ill. University*
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Martha Wilson, *Capital University*
Susan Winchip, *Illinois State University*
Ted Zigler, *NW High Sch. & U. of Cin.*
Dennis Zuelke, *Jacksonville St. Univ.*

How to Get to the Conference

When coming to Chicago, attendees have a variety of transportation options:

O'Hare Airport to the Bismarck Hotel (3 options)

1. Take a CTA train to downtown for about $2.00. Catch the train in the basement of Terminal 3. Take an A or B line. Get off at the Lake Transfer station. This is in the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block. This is the fastest way during rush-hours, and the cheapest.
2. Take the Continental Bus for $12.50 one-way or $22.00 round-trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.
3. Take a cab for around $20.00. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7-10 a.m., 3-7 p.m.), the ride could take an hour or more. Tips average fifteen percent.

Midway Airport to the Bismarck Hotel (3 options)

1. Take a CTA train to downtown for about $2.00. Catch the train at the east end of the airport. Get off at the Clark & Lake station. Climb down the stairs and proceed to the Bismarck, one block.
2. Take a Continental Airport Bus for $9.50 one-way or $16.75 round trip. No reservations are required from the airport. See the agent at the booth for tickets.
3. Take a cab for around $18.00. See O'Hare information above regarding time.

Driving But NOT Parking Downtown (3 options)

From the North or West

1. Park near a Metra station and take a Metra Train downtown. From the Metra station you will need to take a cab to the hotel. Depending on where you board the train, your ride can be inexpensive. For details call (312) 836-7000. Be certain to find out about return trips, especially on weekends.
2. Park at O'Hare remote (follow highway signs to O'Hare), take a shuttle into O'Hare and follow any of the O'Hare options. Remote parking is inexpensive.
3. Park at Kiss and Ride at either the Cumberland or the Harlem Avenue exits off of I-94 (the Kennedy). Take the CTA train (See O'Hare option 1). Parking is inexpensive.

From the South or East

1. Park near a Metra station and take a Metra Train . See #1 above.

Driving And Parking Downtown (4 options)

* Listen to the Radio (670 or 780 a.m.) for traffic reports.
* Remember, rush hours are 7-10 a.m., 3-7 p.m. in both directions. Travel in the city takes time. There is a lot of construction. Plan at least two hours from the near suburbs to downtown. Plan one-half hour (minimum) in downtown traffic.

1. Coming in on I-94 from the North: I-94 junctions with the Kennedy at Irving Park Road. Continue downtown. If traffic is good, it should take 40 minutes from the junction as the Kennedy is under construction. Beyond the Ohio Street exit, get in the right-hand lane. Exit at Washington Street going East. At LaSalle, make a left, go one block and make a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15.00/day) or have the hotel park it. There is NO street parking.
2. Coming in on I-90 from the Northwest: Follow I-90 downtown. This becomes the Kennedy. Follow directions in #1 above for exits and parking.
3. Coming in on I-90/I-90 from the Southeast: Take the I-90 (Skyway) in. The toll will be about $2.00, but it will save you a lot of time. Get in the Express Lanes to downtown. When you approach the LOOP follow the signs saying I-94, Kennedy and Wisconsin. Exit at Monroe Street and head east. At LaSalle, take a left, then a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15/day) or have the hotel park it.
4. Coming from the South or Southwest: Take the I-57 in. This junctions with I-94 and I-90. Read #. 3 above.

If you are arriving some other way, or have any questions, please call Sharon McNeely at (312) 794-2788 before your trip. She will be happy to help.

The Bismarck Hotel 171 W. Randolph St. Chicago,IL 60601
(312) 236-0123

The Bismarck Hotel has been home to the annual meeting of the Mid-Western Educational Research Association for several years and is a friend to the Association. It continues to offer some of the most reasonable rates in Chicago. A change in management has brought major renovations to the Hotel as well as additional services and activities. Ballroom dancing returned to the Bismarck last year and this year the Green Room becomes the Green Orchid jazz lounge. The Hotel is also offering complimentary shuttle bus service to many of the sights in Chicago including the museums, Art Institute, and the Water Tower shopping area.

Mid-Western Educational Research Association - Annual Meeting Registration Form

Please print or type all information:

Name _____
Institution _____
Complete Mailing Address _____
_____
E-mail _____
FAX _____

Required of new members only:

Highest Degree _____
MWERA Division Preference _____
Major Area of Specialization _____
_____
Telephone: Office (___) ___ - _____
Home (___) ___ - _____

Is this your first MWERA conference? Yes _____ No _____

Annual Meeting Registration Fee:
Student (pre-registration $30, on-site $35), Regular/Professional (pre $45, on-site $55), Non-member (pre $50, on-site $60)
(Teachers attending Garcia workshop should contact Greg Marchant or Sharon McNeely)..... $ _____

Membership Dues:
1994 Membership dues (required for all participants and for registration discount rate)
- Regular $18, Student $10..... $ _____
1995 Membership dues - Regular $18, Student $10..... $ _____
Life Membership - $180 ..... $ _____

Conference Workshops (see following pages for details, workshop fees are $10 unless noted)
___W.12.A ___W.1.C ___W.1.D ___W.1.E ___W.1.F ___W.315.A ___W.315.B
___F.9.Lin/F.5.Lin ($5 total for both parts) (T.7.Med and F.915.Med contact Marchant or McNeely).. $ _____

MWERA Materials (all materials must be picked up at the registration desk at the conference, prices do not include postage):
Indicate quantities below:
_____ MWERA Membership Directory $5 ..... $ _____
_____ MWERA 94 Annual Meeting Abstracts (___ paper $4) (___ IBM $3) (___ Mac $3).. ..... $ _____
_____ MWERA mug $3.50 each ..... $ _____

TOTAL..... $ _____

**Registrants requiring special dietary needs for the Friday Luncheon should describe those needs and enclose with this form.*

Please make your check payable to: Mid-Western Educational Research Association (MWERA)

Mail this completed registration form and your check by October 1, 1994 to: Charles C. Anderson, MWERA Executive Officer
1332 Southwind Drive
Northbrook, Illinois 60062

HOTEL RESERVATION FORM - Mid-Western Educational Research Association Conference Oct 12-15, 1994

Please reserve: _____ Single room(s): $60 _____ Double room(s)-Double bed: $75 _____ Double room(s) -Twin beds: $75
Date and Time Arriving: _____ Date and Time Departing: _____

Name(s) _____ Affiliation _____

Address _____

Hotel Reservation must be mailed to the Bismarck Hotel (312) 236-0123 by October 1, 1994:

Bismarck Hotel, 171 West Randolph Street, Chicago, IL 60601

Special Meetings and Events

Division Meetings provide colleagues within MWERA Divisions an opportunity to discuss past experiences and plan future events. Possible invited speakers are discussed as well as the Annual Meeting as a whole. One of the most important activities is to gather names of those interested in serving as Division Chairs. The Program Chair chooses Chairs to head each Division for the next year. Often a "junior" Chair becomes the "senior" Chair for the next year. This year's Division Meetings are held during the morning hospitality time so that coffee and rolls will be available. Check each morning's schedule to see when each Division meeting is held and feel free to attend a different one each morning.

The Association Council is the governing body of MWERA. It includes the elected members of the Association Council and the Board of Directors. At the Annual Meeting financial reports and other Association business is discussed. This year's Association Council meeting is Thursday at 10:50.

The Cracker Barrel Social is an informal get together to wind up the first full day of the conference. Appetizers and a cash bar are available to start the evening in Chicago.

The General Business Meeting is open to all those attending the Annual Meeting. It is the only activity scheduled during the 10:25-11:45 time slot on Friday, so it is hoped that everyone will attend. Information is presented and Association business is discussed. The Graduate student award drawing is also held.

The Friday Luncheon is included in the conference registration fee. Announcements are made and an address will be given by Robert Slavin. This year both the keynote speaker and the luncheon speaker have agreed to be available after their presentations for informal discussion and questions and answers.

The Program Committee Meeting will take a look at the positives and negatives of the current Annual Meeting and begin preparations for next year's. Comments, criticisms, and volunteers are invited. Division Chairs are expected to attend.

The President's Reception is held in the Regency Suite of the Bismarck beginning at 9:00pm on Friday. Everyone is invited to relax with new and old friends and finish discussions or start new ones.

The Road to Brown video documenting the legal crusade for civil rights that culminated with Brown v. Board of Education will be shown Saturday morning.

Rick Pugh's Presidential Address will be a media presentation on distance education on Saturday morning.

Suggestions to Presenters

To make the conference sessions as helpful and enjoyable as possible, the Board of Directors ask presenters to please follow these guidelines:

1. Send a completed copy of your paper to the Session Chair and Discussant so that it is received no later than September 30, 1994. Discussants are not obligated to discuss papers received after this date.
2. Bring at least 40 copies of your paper to the conference. People interested in your paper should receive a copy at the conference.
3. Make overheads and handouts that are attractive and readable. Posters should be firm enough to lean or lay on a table and should include an abstract and highlights from the paper.
4. Plan to present, rather than read your paper in the time allotted.
5. Session chairs should divide the time available equally among the presenters, discussants, and the audience.
6. Because of purchase costs, storage space, and maintenance issues, equipment other than overheads will not be provided.

EXPLANATION OF PROGRAM AND SESSION FORMATS

T.1050.C Teacher Attitudes and Beliefs (Division K-Paper Session)

T = Session is held on Thursday
1050 = Session begins at 10:50 in the morning
C = Session in held in Parlor C

Followed by title of session. Followed by sponsoring Division. Followed by session format.

Session Formats

Paper sessions provide each author an opportunity to present an abbreviated version of a paper. The presenter usually has between 15 and 20 minutes for the presentation. Although a complete paper or summary should be available, the author should not read the paper as a form of presentation. When a discussant is included in the session, comments should be made that synthesize, compare, or contrast the papers, or point out the strengths and weaknesses of the studies. The discussant should not provide a detailed critical review of the paper, but rather should focus on the conceptual and methodological nature of the paper and its results.

Poster-Tables allow the author an opportunity to interact with small groups of interested colleagues for a longer period of time (usually 40 minutes to over an hour). Posters placed on a table or propped up on chairs provide an overview of the paper. The poster should include a brief abstract as well as highlights or significant information from the paper presented in large type font for easy reading from a distance. The author should have copies of the complete paper or summary and should be available to discuss the paper during the entire session. Poster-Tables are abbreviated P-T on the matrix.

Symposia allow a panel of presenters with a shared topic an opportunity to make a presentation and share views. Symposia are abbreviated Sym on matrix.

Invited speakers and panels have been invited to address the conference. They are recognized leaders in education and have been asked to share their experience and knowledge. Everyone attending the conference is invited to attend these sessions. Invited sessions are abbreviated Inv on the matrix or are simply described without a format designation.

Alternative formats allow presenters to experiment or use less traditional methods to convey information. Although all sessions should allow for question or discussion time, most alternative sessions strive for increased participation by those attending. Alternative sessions are abbreviated Alt.

Workshops are designed to allow presenters to involve those attending in the active development of new skills or knowledge. They are scheduled for two to four hours, and a small fee is charged.

Evaluate sessions and the annual meeting
An evaluation form for the conference will be included in your registration materials. Session Chairs should distribute evaluation forms for each session. This is your conference and your comments are important to the improvement of the MWERA annual meeting.

General Information

Registration

Everyone participating in or attending the MWERA annual meeting must be registered. Those planning on attending the annual meeting are encouraged to pre-register for the conference, any workshops, and make hotel reservations early (pre-registration and reservations must be mailed by October 1, 1994.

On-site registration and packet pickup are available in the lobby of the Bismarck at the following times:

Wednesday, October 12	11:30 am - 4:30 pm
Thursday, October 13	8:00 am - 4:00 pm
Friday, October 14	8:00 am - 4:00 pm
Saturday, October 15	8:00 am - 10:30am

Name tags should be worn to all sessions and must be worn to the conference luncheon. Teachers registering for the Garcia Workshop and sessions should contact Greg Marchant (317 285-8500) or Sharon McNeely (312 794-2788)

Membership provides reduced conference registration fees and a subscription to the MWERA official publication, the *Mid-Western Educational Researcher*. Those attending are encouraged to join. Conference presenters must be 1994 members.

Selected **MWERA publications** are available through pre-registration:

Directory of MWERA members is available for $5.
MWERA 94 Meeting Abstracts is available for $4 on paper and $3 on computer disk (IBM & Mac).

These publications may not be available at the conference unless ordered through pre-registration.

A limited number of copies of this Program Issue may be available at the registration desk for $4 each.

MWERA Mugs are available at this year's annual meeting. The cream colored mugs hold 10 ounces and have "MWERA" printed on one side and "Mid-Western Educational Research Association" printed on the other in dark green lettering. The mugs may be ordered through pre-registration for $3.50 each (quantities are limited). Publications and mugs must be picked up during the conference at the registration desk.

An expanded **Exhibit Hall** will feature publishers and those providing materials and services to educators on Friday in the Maximillian Room. Plan on stopping by.

	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Maximilian
12:00-3:00	Workshop Creating Learning Opportunities in Supervision						
1:00-5:00			Workshop Focus Group Interviews as a Needs Assessment Tool	Workshop Standards and Practices in Qualitative Research	Workshop Many Facet Rasch Measurement	Workshop An Introduction to Correspondence Analysis	
3:15-5:15	Workshop Use of Authentic Assessment in the Preparation of Professional Educators	Workshop An Introduction to Hierarchical Linear Modeling					
8:00-10:30							Motivation Issues in Education Corno, Pintrich, & Schunk

W.12.A **Creating Learning Opportunities in Supervision**

12:00-3:00 (3 hour workshop) Parlor A - Fee $10
PRESENTERS:
Carmen R. Giebelhaus, University of Dayton
Linda E. Morrow, Muskingum College
Mary K. Bendixen-Noe, Ohio State University-Newark
The purpose of this workshop is to explore innovative supervisory practices designed to enhance the learning process during preservice teacher education field experiences. Topics include preparing teacher educators to train field-based supervisors, preparing cooperating teachers for supervisory leadership, and preparing teacher candidates to be observed and to be observers. The workshop will guide participants through three stations designed to discuss processes and provide materials associated with effective supervision, including: the mechanical third ear device (Bug-in-the-Ear); orientation/training materials and audio-tapes; site-based supervision models/strategies; and student observation/conferencing techniques.

W.1.C **Focus Group Interviews as a Needs Assessment Tool**

1:00-5:00 (4 hour workshop) Parlor C - Fee $10
PRESENTER:
Thomas M. Archer, Ohio State University
Originally developed as a marketing research tool, in recent years the Focus Group Interview (FGI) technique has also gained popularity in gathering information for decision making in educational and other social science settings, particularly in needs assessment. FGI involves a trained moderator who guides a small group of participants through a pre-determined questioning route. The information gained is rich in detail due to the discussion interaction and qualitative nature. The workshop will introduce the FGI technique, outline the advantages and disadvantages, and illustrate examples of how it can be used in needs assessments in educational settings.

MWERA Workshops offer professional training by knowledgeable experienced experts at a fraction of the cost of similar workshops offered elsewhere.

W.1.D **Standards and Practices in Qualitative Research**

1:00-5:00 (4 hour workshop) Parlor D - Fee $10
PRESENTERS:
James Powell and Fran Peterman Gerhard, Ball StateUniversity
This workshop will deal with the accepted standards of practice for qualitative research. It will begin with a discussion on what constitutes validity and reliability in qualitative studies. It will also seek to address such issues as researcher role and responsibilities, participant role and responsibilities, data collection methods and the purpose served by the different methods (including triangulation), data analysis, and report writing. While this is a very ambitious schedule, it will be modified to meet the needs of individuals involved in the workshop. If you have a study you wish to discuss, bring it along and we will make every effort to answer any questions you might have.

W.1.E **Many Facet Rasch Measurement: An Introduction to the Model, Computer Applications, and the Development of Performance Tasks**

1:00-5:00 (4 hour workshop) Parlor E - Fee $10
PRESENTERS:
Craig W. Deville and Mary E. Lunz, American Society of Clinical Pathologists;
John Michael Linacre, University of Chicago
The workshop will introduce participants to the many-facet Rasch measurement model (MFRM), and to provide them with the practical knowledge necessary to use the model and to conduct MFRM research. The MFRM is an extension of the Rasch model and is used, for example, to correct examinee measures for relatively difficulty of particular tasks undertaken and the judge's relative severity when rating examinee performance on these tasks. In a context involving oerformance assessment, the MFRM is particularly useful. The history, theoretical underpinnings, implications, computer input and output, and a comprehensive example will be presented.

W.1.F **An Introduction to Correspondence Analysis**

1:00-5:00 (4 hour workshop) Parlor F - Fee $10

PRESENTERS:

Hak Ping Tam, The Univiversity of Maryland

John J. Kennedy, The Ohio State University

The objective is to introduce the history, geometry, algebra, computational features, and computer applications (e.g., BMDP) of correspondence analysis (CA), a relatively new technique that describes complex categorical variable relations through graphical depictions. The workshop is designed for researchers who possess a working knowledge of basic contingency table analysis (e.g., chi-square), but who currently possess little or no knowledge of CA. Its potential for creative descriptive use in educational research and evaluation is unlimited. However, due more to lack of knowledge than complexity, few applications of CA have been observed in the educational literature. Through lecture, examples, and computer illustrations, the instructors willattempt to promote a conceptual understanding of CA and to demonstrate how this exploratory-graphical technique can be used to great advantage in educational inquiry.

W.315.A **The Use of Authentic Assessments in the Preparation of Professional Educators**

3:15-5:15 (2 hour workshop) Parlor A - Fee $10

PRESENTER:

Stanley E. Wigle and Charles D. Manges, Wayne State College

In order to meet the demands for an "educated work force" educators must generate real world, authentic tasks that exemplify communication skills, problem-solving, invention, and other forms of critical thinking. This workshop will focus on authentic and alternative assessments which provide a method of not only developing stronger assessment tools, but utilizing those tools to determine instructional decisions while assessing important outcomes. The presentation will involve higher education faculty and K-12 educators in an open exchange of ideas leading to participant creation of examples of authentic assessment tasks and scoring rubics.

MWERA Offers Special Multicultural Workshop for Teachers

Teachers interested in attending a workshop presented by Eugene Garcia, U. S. Dept. of Education should contact Greg Marchant (317-285-8505) or Sharon McNeely (312 794-2788) for rates and a registration form.

W.315.B **An Introduction to Hierarchical Linear Modeling**

3:15-5:15 (2 hour workshop) Parlor B - Fee $10

PRESENTER:

Randall E. Schumacker, Univiversity of North Texas

Often researchers are interested in examining differences between school districts, schools, or classroons while examining processes within these organizational units. The workshop will provide participants with an applied and practical understanding of this analytical method. The workshop will cover the types of research questions addressed, data coding, data analysis, presentation, and imterpretation of results. The workshop will include a computer demonstration and a packet of materials will be distributed that includes: sample exercises, computer printouts, and references.

THURSDAY

T.7.Med **Issues in Multicultural Education**

7:00-9:30 (2 1/2 hour workshop for teachers only) Medill -Special Fee- Contact Drs. Marchant or McNeely

PRESENTER:

Eugene Garcia, Director of the Office of Bilingual Education and Minority Language Affairs, U.S. Department of Education

PARTICIPANTS:

Classroom teachers only

Will present information on issues related to cultural diversity and how to make classrooms more multicultural in orientation. The focus will be on helping classroom teachers explore issues they face and determine ways to address them. Teachers of all grade levels are strongly encouraged to attend this learning session.

FRIDAY

F.915.Med **Issues in Multicultural Education**

9:15-11:45 (2 1/2 hour workshop for teachers only) Medill -Special Fee- Contact Drs. Marchant or McNeely

PRESENTER: *Eugene Garcia, U.S. Department of Ed.*

Other information is same as above.

F.9.Lin/F.5.Lin **Getting and Keeping an Academic Position**

9:00-10:20 & 5:00-6:16 (2 part workshop for graduate students) Lincoln - Fee $5

PRESENTERS:

Jerry Jinks, Illinois State University

Kim Metcalf, Indiana University

Carolyn Babione, Emporia State University

PARTICIPANTS:

Graduate students seeking new position and new hires

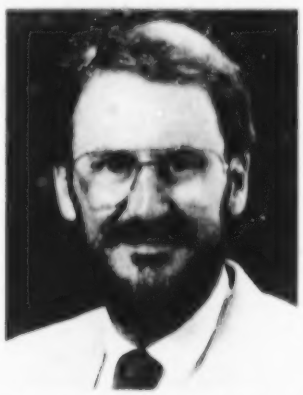
Popular workshop presenting honest answers to job search questions and about how to stay on the road to promotion and tenure.

MOTIVATION ISSUES IN EDUCATION

Where There's a Way, There's a Will. Lyn Corno

Lyn Corno, Teachers College, Columbia University, is credited with major advancements in research on self-regulation and motivation reported in numerous articles and book chapters.

Paul R. Pintrich, University of Michigan
Published over 40 articles and book chapters on issues of motivation, learning, and self-regulation. He has edited three books on motivation and has a textbook forthcoming on *Motivation and Education*,co-authored with Dale Schunk.



Dale H. Schunk, Purdue University
Published over 55 articles and book chapters, and has co-edited: *Self-Regulation of Learning and Performance*, *Self-Regulated Learning and Academic Achievement*, and *Student Perceptions in the Classroom.*

Motivation is of critical importance in education today. Researchers and practitioners are concerned about establishing classroom environments that help to develop motivation among students and teachers and maintain it at an optimal level. Dale Schunk

Maximillian Room, **BISMARCK HOTEL,** 171 W. Randolph, CHICAGO, IL

Public Invited - **8:00 pm** - No Charge

Sponsored by the Mid-Western Educational Research Association

Please duplicate, distribute, and post this announcement

	Medill	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincol	Maxi millian	Fifth Floor Conference
8:00-9:00							Division Meeting K		Hospitality & Div. Meetings B, G, H	
8:45-9:25								New Member Welcome		
9:30-10:40									Keynote Address Lyn Corno	
10:50-12:10	D Paper Issues in Validity	A Paper Training Admin	B Paper Achieve & Instruction	K Paper Teacher Beliefs	K Paper Teacher Percep	E Paper Parenting & Students	F Sym Multi-State Para	Associat. Council Meeting	Follow-up Discussion Lyn Corno	A Sym Values in Ed. Leadership
12:20-1:40	K Paper Supervisng Field Exp	A Paper Leadership & Change	J Paper Faculty Issues	H Paper Recruit & Training	I Paper Medical & Dental Ins	E Alt African Am Male	G Paper Fam Struc & Culture	D Sym Rasch Model	Gene Glass Elec. Jrnls	F Sym Peirce
1:45-3:05	K Paper Field Experince	H Paper Program Implement	J Paper Post-Secondary Learning	K Paper New Teachers	D Sym Issues in Reliability	E Alt Full Inclusion	G Paper Diverse Society	K Paper Case Studies	Context in Teacher Education	A Alt Handbook on Sch. Supervis
3:15-4:45	K Alt Child Neg & Abuse	A Paper Restruct & Acad Perf	J Paper Post-Sec Issues	C Paper Achieve & Attrib Th	D Paper Statistical Modeling	E Paper Counseling	L Sym Dimension of Tests	K Paper Teach Ed Alterns	Meet the Editors Session	K Alt Sch Based/ U. Collab.
4:50-6:00	G Paper Ecological Issues	I Paper Applied Research	B P-T Innovative Currulum	C P-T Issues in Cognition	D P-T Qualitative Methods	E Paper Beh & Cog Assess LD	G Alt African-Am Eng	K Paper Teacher Ed Goals	-----	Chicago Research Ensemble
6:00-7:00	Teacher Workshop E. Garcia 9:00								Cracker Barrel Social	

T.8.Max **Mid-Western Hospitality**
(Complimentary coffee and rolls) 8:00-9:00 Maximillian

T.810.Max **Division Meetings**
(Discussion-bring your coffee and rolls and review past and plan future with your Division colleagues) 8:10-9:15 Maximillian (Div. K in Parlor F)
PARTICIPANTS: *Divisions B, G, H, and K*

T.845.Lin **New Member Welcome: Old Friends and New Faces**
(An introduction and orientation for those new to MWERA or the annual meeting) 8:45-9:25 Lincoln
CHAIR: *Carmen Giebelhaus, University of Dayton*
PARTICIPANTS: *MWERA Officers and friends*

T.930.Max **Working Toward Foresight and Follow-through** (Keynote Address)
9:30-10:40 Maximillian
CHAIR: *Gregory J. Marchant, Ball State University*
SPEAKER: *Lyn Corno, Teachers College, Columbia University*

T.1050.Med **Issues in Validity**
(Division D-Paper Session) 10:50-12:10 Medill
CHAIR: *Laura Barnes, Oklahoma State University*
PARTICIPANTS:
A Validation Technique Combining Content and Construct Evidence.
Craig W. Deville, American Society of Clinical Pathologists
The Use of Rasch Analysis to Establish the Reliability and Validity of a Paper and Pencil Simulation.
Christine Fox, University of Toledo; Julie Gedeon, Kent State University; Thomas E. Dinero, Kent State University
DIF of Novices and Experts on a Practical Knowledge Instrument.
Julie Gedeon, Kent State University; Christine Fox, University of Toledo; Thomas E. Dinero, Kent State University
Concurrent Validity Coefficients: Eighth Grade Science Illinois Goal Assessment Program Test.
David Suddick, Leon J. Zalewski, and John M. Reid, Governors State University
DISCUSSANT: *Patricia Klass, Illinois State University*

Lyn Corno

Professor of Education and Psychology at Teachers College-Columbia University and Editor of "Teaching, Learning, and Human Development" section of the *American Educational Research Journal*, has nearly 50 publications including books, book chapters and articles in top educational research journals.

Foresight, prudence, discretion--action in reference to the future--have shown themselves to be necessary qualities for social evolution throughout time. How are foresight and follow-through reflected in the social systems we create, including education? How are they learned by people as they function within these systems? With knowledge about what makes communities and individuals able and inclined to "take the long view," educators, parents, and counselors might be better able to influence future generations in this direction.

T.1050.A **Training and Retention of Administrators**
(Division A-Paper Session) 10:50-12:10 Parlor A
CHAIR: *Karen Michaelis, Illinois State University*
PARTICIPANTS:
Linking the NPBEA Competencies to Principalship Practicum.
Edie L. Holcomb, North Central Association, Wisconsin
Superintendent Turnover: Is It Worse in Financially Troubled Districts?
William L. Sharp, Southern Illinois University
A Case Study Evaluation of the Reflective Process in a Preparation Program for Educational Administrators.
Ted A. Zigler, University of Cincinnati
DISCUSSANT: *Connie Nolte, Akron Public Schools*

T.1050.B **Student Achievement as a Function of Instructional Practices and Curriculum Tracks**
(Division B-Paper Session) 10:50-12:10 Parlor B
CHAIR/DISCUSSANT: *Peter Pereira, DePaul Univ.*
PARTICIPANTS:
Student Selected Curriculum Tracks as a Mediating Influence on Academic Achievement.
Linda S. Behar, University of Florida
Thinking Math as a Teaching Tool.
Scydonia A. Walls, Chicago State University
A Comparison of the Effectiveness of CAI and Programmed Instructional Delivery Methods.
Bonnie L. Cirignano and Isadore Newman, University of Akron
What Teachers Do in the Classroom: A Study on the Use of Research-Based Instructional Practices in Reading.
Virginia-Ellen Goodman, Chicago State Univ.

T.1050.C **Teacher Attitudes and Beliefs**
(Division K-Paper Session) 10:50-12:10 Parlor C
CHAIR: *Sonja J. Smith, Mt. Vernon Nazarene College*
PARTICIPANTS:
Change in Teachers' Conceptions and Practice.
Roberta A. Fuller, Illinois State University
Teacher Perception of Student Interest in Multicultural Tradebooks.
Judy C. Lambert, Univ. of Wisconsin-Oshkosh
Differences in Teachers' Attitudes toward Student Behavior Problems.
Barbara J. Witteman, Miami University
A Study of Prospective Teachers' Attitudes.
Linda H. Chiang, Anderson University

A special thank you to the Chicago Public Schools for the use of the overheads and their continuing support of MWERA.

T.1050.D **Teacher Perceptions and Attitudes**
(Division K-Paper Session) 10:50-12:10 Parlor D
CHAIR: *Marilyn K. Urquhart, Univ. of South Dakota*
PARTICIPANTS:
Interactive Perceptual Psychology: The Human Psychology that Mirrors the Naturalness of Our Total Behavioral System.
Gary F. Russell, Notre Dame College; Linda Shoare, The Center for Prof. Advancement
The Effects of the Focus Model on TeacherPerception, Efficacy, and Application in the Classroom.
Gary F. Russell, Notre Dame College
Our Beliefs About Their Beliefs: Educational Beliefs of Faculty and Teacher Education Students.
Jean W. Pierce, Northern Illinois University
DISCUSSANT: *Louise E. Flemming, Ashland Univ.*

T.1050.E **Parental Training: Influence with Children**
(Division E Paper Session) 10:50-12:10 Parlor E
CHAIR: *Larry McNeal, Illinois State University*
PARTICIPANTS:
Effect of Parent Training for Parents of Children with Attention Deficit Hyperactivity Disorder on Parent Stress.
Michelle Beabout Viro, Susan Turetzky, and Alison Rifkin, Indiana State University
Age, Socioeconomic Status, Type of School Attended, and Students' Perception of Parental Help with School Work.
Jupian J. Leung and Daniel O. Lynch, University of Wisconsin-Oshkosh
DISCUSSANT: *Sharon Paulson, Ball State University*

T.1050.F **The Multistate Paradigm: Contributions from Imagery, Eastern Psychology, Meditation, Mysticism, and Psychodelics**
(Division F-Alternative Format-formal presentation, experiential exercises, theoretical positions, discussion)
10:50-12:10 Parlor F
CHAIR: *Thomas Roberts, Northern Illinois University*
PARTICIPANTS:
Imagery. *Kathleen Best, Northern Illinois University*
Meditation and Eastern Psychology.
Fred Hannah, Northern Illinois University
Psychosynthesis and Unitive Conscious.
Paula Hruby, Northern Illinois University
Multistate Theory and Psychoactive Drugs.
Thomas Roberts, Northern Illinois University

T.1050.Lin **Association Council Meeting**
(Business Meeting) 10:50-12:10 Lincoln
PARTICIPANTS: *MWERA Association Council and Board of Directors*

T.1050. Max **Keynote Follow-up**
(Informal Discussion) 10:50-12:10 Maximillian
CHAIR: *Jennifer J. Fager, South Dakota State Univ.*
SPEAKER: *Lyn Corno, Teachers College, Columbia*
What kinds of research would inform efforts to document what is known about the socialization of personal qualities like foresight and follow-through? How can partnerships between schools, youth organizations, and work settings function to better prepare and support future responsible citizens? What do we need to learn about the political, social, and economic arenas in which such interventions take place?

T.1050.Fifth **Perspectives on Values in Educational Leadership**
(Division A-Symposium) 10:50-12:10
Fifth Floor Meeting Room
ORGANIZER: *Martin H. Jason, Roosevelt University*
CHAIR: *Charles D. Almo, Roosevelt University*
PARTICIPANTS:
The Role of Values in Leadership Behavior.
Charles D. Almo, Roosevelt University
Value Orientations of Educational Leaders: Implications for Research.
Martin H. Jason, Roosevelt University
Examining Values and Ethics in Leadership Education.
Tom Van Dam, Roosevelt University
Values in Curriculum Supervision.
Yiping Wan, Roosevelt University
DISCUSSANTS:
Frances Carroll, Cook County Juvenile Temporary Detetion Center
Richard Smith, Dr. Martin Luther King High School and Roosevelt University

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T.1220.Med **Supervising Field Experiences**
(Division K-Paper Session) 12:20-1:40 Medill
CHAIR: *Cheryl Didham, Ohio State University*
PARTICIPANTS:
The State of the Art in the Supervision of Student Teaching.
Laura Lipsett, Hema Ramanathan, Doug Smith, and Donald Williams, Ohio State University
A Model for Improving the Preservice Teacher/Cooperating Teacher Diad.
John A. Grossman and Daniel L. Keller, Ohio State University
The Nature and Effectiveness of Feedback Given by Cooperating Teachers to Student Teachers.
Elizabeth A. Wilkins, Southern Illinois Univ.
Supervision Models for Early Field Experiences: A Three Year Summary.
Dennis E. Potthoff and Frank Kline, Wichita State University

T.1220.A **Leadership, Organizational Change, and Minority Student Retention**
(Division A-Paper Session) 12:20-1:40 Parlor A
CHAIR: *William L. Sharp, Southern Illinois Univ.*
The Restructured School: What's Principal Efficacy to Do with It?
Jacqueline K. Mitchell and Edith A. Rusch, University of Toledo
Positive Factors of Systemic Change Identified in a Local Board of Education.
Barbara A. Steck, Miami University
The Lessons of Leadership in Collaborative Schools: Practice Informing Theory Informing Practice.
Edith Rusch, University of Toledo
African American Student Retention at Predominantly White Colleges: Perceptions of Minority/Student Affairs Personnel.
A. William Place, University of Dayton; Clint Kaufield, Baptist Bible College

T.1220.B **Faculty Issues**
(Division J-Paper Session) 12:20-1:40 Parlor B
CHAIR/DISCUSSANT: *Wayne Van Zomeren, Northwest Missouri State University*
PARTICIPANTS:
Multiple Forms of Instructional Feedback: A Triangulated Approach and Analysis.
Neil E. Prokosch, National-Louis University
Peer Review in Promotion and Tenure Decisions in Higher Education: Court Decisions 1984-1990.
Linda L. Timm and Edward R. Hines, ISU
Reflections of a Productive Faculty.
Marcia Summers, Kirby Koriath, and Carl R. Summers, Ball State University

T.1220.C **Student Recruitment, Training, and Perceptions**
(Division H-Paper Session) 12:20-1:40 Parlor C
CHAIR: *L. Ruth Struyk, Northern Illinois University*
PARTICIPANTS:
An Evaluation of a Teriary Prevention Program: Students' Perspectives.
Carmen Montecinos, Univ. of Northern Iowa
Minimum Math Proficiency: A Descriptive Study of the Degree of Congruence of Perception among Teachers in Different Settings.
Isadore Newman, Al Al-Rubaiy, and Dianne Brown-Wright, University of Akron; Kathy Al-Rubaiy, Ashland School District; Ellen Goggins, Akron City-Wide Testing
Issues Involved in the Recruitment and Retention of Adult Participants in an Even Start Family Literacy Program.
Mary Ann Robinson, Dayton Public Schools
Evaluating Organizational Training Programs: Alternatives & Criteria for Selection.
Joseph R. Marth, Southern Ohio College

T.1220.D **Measurement in Medical/Dental Education**
(Division I-Paper Session) 12:20-1:40 Parlor D
CHAIR: *Kim M. Hutchinson, Northern Illinois Univ.*
PARTICIPANTS:
The Dimensionality of Problem-Based Learning.
Hripsime A. Kalaian and Patricia B. Mullan, Michigan State University
The Historical Development of Fit and Its Assessment in the Computer Adaptive Testing Environment.
Gregory Ethan Stone, National Certification Corporation
Confirming the Standard on Part II of the National Board Dental Examination.
Gene A. Kramer, American Dental Association
DISCUSSANT: *Kevin Larkin, American Dental Association*

T.1220.E **Assessment of African-American Male Empowerment and Intervention Strategies**
(Division E-Alternative Format) 12:20-1:40 Parlor E
CHAIR: *Thomas E. Midgette, University of Arkansas*
PARTICIPANTS:
Thomas E. Midgette, University of Arkansas
Nudie E. Williams, University of Arkansas
Isaiah Sessoms, Clarion University
Terry Shelton, University of Akron
DISCUSSANT: *Jerome Tillman, Illinois State University*

T.1220.F **Family Structure and Cross Cultural Awareness**
(Division G-Paper Session) 12:20-1:40 Parlor F
CHAIR: *Joan S. Timm, University of Wisconsin-Oshkosh*
PARTICIPANTS:
Cross Cultural Analysis of the Hurried Child Concept: United States and Thailand.
Marilyn Moore and Patricia H. Klass, Illinois State University
Cultural Influences on Academic Achievement of Chinese and White Americans.
Gianna M. Gariglietti and Wei-Cheng Mau, Wichita State University
The Effect of Family Structure and Values on Substance Use.
C. Van Nelson, Larry W. Henriksen, and Jay C. Thompson, Ball State University; and Van C. Cooley, Westfield-Washington School Corporation

Gene V Glass

College of Education, Arizona State University; creator of meta-analysis for research synthesis, former President of AERA; former Editor of the *American Educational Research Journal*, *Review of Educational Research*, and the *Psychological Bulletin*; current Editor of *Education Policy Analysis Archives* (electronic journal), and keeper of AERA LISTSERVs

A peer-reviewed scholarly electronic journal in education policy analysis has 1,300 direct subscribers 18 months after its creation; it is free. A competing paper journal just saw its subscriptions fall below 200; it costs $100 a year. It is no mystery what is going on here.

T.1220Lin **Solving Measurement Problems with the Rasch Model**
(Division D symposium) 12:20-1:40 Lincoln
CHAIR: *Betty A. Bergstrom, Computer Adaptive Technologies, Inc.*
PARTICIPANTS:
How Rasch Fit Statistics Help us to Measure Changes in Children's Ability over Time.
Tony Pitruzzelo, Chicago Public Schools
Using Facets to Investigate Speech Competency.
Donna Surges Tatum, University of Chicago
A Procedure for Locating any Point in N-Dimensional Space on a Chosen Dimension.
Mark H. Moulton, University of Chicago
Rasch Factor Analysis.
Benjamin D. Wright, University of Chicago

T.1220.Max **Papyrophiles v. Cybernauts: Scholarly Star Wars and the Future of Electronic Publication**
(Invited Address) 12:20-1:40 Maximillian
CHAIR: *Richard Pugh, Indiana University*
AUTHORS: *Gene V Glass, J. Scott Williams, and William J. Brand, Arizona State University*
SPEAKER: *Gene V Glass, Arizona State University*

T.1220.Fifth **C. S. Peirce and Interpretive Research in Education**
(Division F-Alternative Session) 12:20-1:40
Fifth Floor Meeting Room
CHAIR: *Thomas Liftendahl, Northern Illinois Univ.*
PARTICIPANTS:
Student Commission for the Use of Interpretive Theory in Education
DISCUSSANT: *Gary Shank, Northern Illinois Univ.*

T.145.Med **Field Experiences in Teacher Education**
(Division K-Paper Session) 1:45-3:05 Medill
CHAIR: *Mary B. Campbell, Saint Xavier University*
PARTICIPANTS:
Early Field Experience: How Well Are Students' Expectations Met?
Alexandria J. Rekkas, Ball State University
A Continuing Study of the Problems of Student Teachers
Sonja J. Smith, Mount Vernon Nazarene College
Structure vs. Unstructure in Field Placements: What Preservice Teachers Gain, What Preservice Teachers Lose.
Rosemary F. Schiavi, University of Evansville
Pre-Student Teaching Field-Based Semester.
Bernard W. Arenz and Michelle Appel, Southwest Missouri State University

T.145.A **Analyses of Program Implementations**
(Division H-Paper Session) 1:45-3:05 Parlor A
CHAIR: *Cory Cummings, Northern Illinois University*
PARTICIPANTS:
Fundemental Restructuring of a High School Program in the 21st Century.
William E. Loadman, Ohio State University
A Study of a Recreational Reading Program for Disadvantaged Fifth Grade Students.
Lou Anna Moore, Miami University
Adapting to Mathematics Teaching Reform: A Study of the Constraint Issues in Middle Grade Classrooms.
Jane M. Keiser and Diana V. Lambdin, Indiana University
Making "Connections": A Frames Analysis Perspective on the Implementation of an Innovative Pilot Program.
Nina G. Dorsch, Miami University
DISCUSSANT: *Tom Schrader, Northern Illinois University and Arthur Anderson & Company*

T.145.B **Services to Facilitate Learning in Postsecondary Institutions**
(Division J-Paper Session) 1:45-3:05 Parlor B
CHAIR/DISCUSSANT: *Terri Sandoval, University of Nevada-Las Vegas*
PARTICIPANTS:
Factors Related to Learning Occurring in an Adult Education Program.
Daniel Okoro and L. E. Miller, Ohio State University
Support Service Needs of Adult College Students: Juniors and Seniors vs. Masters Level Students.
Peggy G. Woodward, Burton A. Collins, and David E. Suddick, Governors State University
Mentoring and Tutoring Support for Academically Challenged Postsecondary Students.
Roger Carlsen and Bea Bedard, University of Dayton

Nearly 100 different institutions were represented by those presenting at the 1993 MWERA Annual Meeting

Sandra Hollingsworth

Michigan State University, well published researcher in literacy, reading, teacher education and gender issues.

Why are most teaching credential candidates white women, and most administrative credential candidates white men? Why isn't the social construction of gender part of the "knowledge base" of teacher education? What is our responsibility toward these issues as teacher educators?

Anita Woolfolk Hoy

Ohio State University, former Vice-President of AERA Division K, has had research articles on the development of teachers' beliefs in the *Journal of Educational Psychology, American Educational Research Journal, Elementary School Journal, Teaching and Teacher Education*, and *Action in Teacher Education*. Her text, *Educational Psychology*, is now moving into its 6th edition.

Too often in teacher education we ignore the knowledge and beliefs our students bring to their preparation programs. Prospective teachers may learn new words to describe education, but never change their fundamental understanding of what it means to teach.

Thomas J. Lasley

University of Dayton, former Editor of the *Journal of Teacher Education*, Editor and author of books and articles concerning teaching and teacher education including *Teaching Peace: Toward Cultural Selflessness* which is in press.

Teacher education is changing as a result of several different social and political forces. Understanding those forces sheds light on how teacher educators need to develop new assumptions to undergird minorative program endeavors.

T.145.C **New Teachers in the Profession**

(Division K-Paper Session) 1:45-3:05 Parlor C

CHAIR: *Kathleen Maury, Mankato State University*

PARTICIPANTS:

Collaboration for Mentoring Beginning Special Education Teachers.

Carol B. Furtwenger, Dennis Potthoff, Frances Clark, Frank Kline, Robert Alley, and Daniel Wojogbeh, Wichita State University

Teacher Shortages in the United States: Outlook for the Future.

Cynthia L. Velotta, Ohio State University

Personal and Family Characteristics Associated with Teacher Candidates' Reasons Given for Becoming Teachers in the 1990s.

Ronald N. Marso and Fred L. Pigge, Bowling Green State University

The Anatomy of a Mentoring Program for Beginning Urban Teachers.

Melissa R. Freberg, John M. Zbikowski, and Tom Ganser, Uniersity. of Wisconsin-Whitewater

T.145.D **Issues of Reliability**

(Division D-Paper Session) 1:45-3:05 Parlor D

CHAIR: *Ralph Mueller, George Washington University*

PARTICIPANTS:

An Empirical Investigation into the Reliability of Gain Scores.

Robert E. Rachor and Gregory J. Cizek, University of Toledo

Estimating the Reliability of Criterion Referenced Tests before Administration.

Clinton I. Chase, Indiana University

Assessing Evidence for the Reliability and Validity of Ratings of Group Performance.

Bruce G. Rogers, University of Northern Iowa

DISCUSSANT: *Laura Barnes, Oklahoma State University*

T.145.E **Full Inclusion of Exceptional Students: Three Perspectives**

(Division E-Alternative Session) 1:45-3:05 Parlor E

PARTICIPANTS:

Stanley E. Wigle, Wayne State College

Charles D. Manges, Wayne State College

Daryl J. Wilcox, Wayne State College

T.145.F **Education of a Diverse Society**

(Division G-Paper Session) 1:45-3:05 Parlor F

CHAIR: *Mary Ann Flowers, Cleveland State University*

PARTICIPANTS:

Individualism, Diversity, and Pluralism in American Society: The American Dilemma.

Joan S. Timm, University of Wisconsin-Oshkosh

Creating Multicultural Contexts to Examine Pre-Teachers' Perspectives of Culturally Different Behavior.

Clara A. New, University of Wisconsin-Parkside

Educational Claims-Making: Construction of the At-Risk Students.

Mary K. Finley, Southern Illinois University

Ethnicity and Gender in Children's Literature Used by Elementary Teachers.

Holly D. Mackley and Anna Bramfeld, Saint Xavier University

T.145.Lin **Teacher Education and Case Studies**

(Division K-Paper Session) 1:45-3:05 Lincoln

CHAIR: *Jay Price, University of Wisconsin-Stevens Point*

PARTICIPANTS:

Experience is the Best Teacher? A Case Study of Learning to Teach.

Sharon J. Jensen, Iowa State University

Consequences of Preservice Participation in a National Case Competition.

Mary R. Sudzina, University of Dayton

Cases for Teaching: An Analysis of Their Levels of Difficulty.

Mark P. Mosert, Moorhead State University

DISCUSSANT: *Karen M. Dult, Grinnell College*

T.145.Max **Context Considerations in Teacher Education**

(Division K-Invited Session) 1:45-3:05 Maximillian

CHAIRS: *Deborah Bainer, Ohio State University and Kim Metcalf, Indiana University*

PARTICIPANTS:

I Wouldn't Have Seen It If I Hadn't Believed It: Prior Knowledge and Learning to Teach.

Anita E. Woolfolk Hoy, Ohio State University

Teacher Education: New Assumptions and Old Problems.

Thomas J. Lasley, University of Dayton

The Problem of Gender in Teacher Education

Sandra Hollingsworth, Michigan State University

T.145.Fifth **Research Perspectives on Supervision: Preparation and Scope of the First *Handbook of Research on School Supervision***

(Division Alternative Format Session)
1:45-3:05 Fifth Floor Meeting Room
CHAIR: *Joyce E. Killian, Southern Illinois University*
PARTICIPANTS:
Bernard Badioli, Miami University of Ohio
Nancy Hoffman, West Virginia University
Donna M. Post, Southern Illinois University

T.315.Med **The Role of the Public School Educator in the Investigation and Prosecution of Child Neglect and Abuse**

(Division K-Alternative Session) 3:15-4:45 Medill
CHAIR: *Dick Lipka, Pittsburg State University*
PARTICIPANTS:
Bradley Cameron, Pittsburg State University
Rozanne Sparks, Pittsburg State University
Kent Runyan, Pittsburg State University

T.315.A **Restructuring, Development, and Academic Performance**

(Division A-Paper Session) 3:15-4:45 Parlor A
CHAIR: *William B. Thiel, Thiel Enterprises*
PARTICIPANTS:
Teacher Variables: Predicting Attitudes During High School Restructuring.
Michele D. Maki, Illinois State University
Administrative Use of Staff Development Models: Teachers and Computers.
Charles E. Kline, Purdue University; Susan M. Cox, Penn-Harris Madison Schools
The Relationship of Work Hours, Credit Hours, and Study Hours with Academic Performance.
Joseph Migden, Barbara A. Bucey, and Sophie T. Kus-Patena, University of Akron
Complexity, Organization Adaptation, Learning, and Systemic Restructuring.
Grover H. Baldwin and Edith Rusch, University of Toledo

T.315.B **Postsecondary Classroom Instructional Issues**

(Division J-Paper Session) 3:15-4:45 Parlor B
CHAIR: *Roger Carlsen, University of Dayton*
PARTICIPANTS:
As Students Experience A Qualitative Research Class: Themes, Metaphors, Syneldoche, and Paradoxes.
John W. Creswell, Sandy Howard, Doreen Gosmure, Jeanne Harrington, Joan Sullivan, Yvonne Jacobs, University of Nebraska
Mystical Experiences and Addiction Beliefs of Undergraduates.
Paula J. Hruby and Thomas E. Roberts, Northern Illinois University
Applying Research: An Analysis of Texts for Consumers of Research.
R. L. Erion and Gary Steinley, South Dakota State University
What's Up Doc? An Analysis of Grade Inflation.
Marcia Summers, James E. Green, and Carl Summers, Ball State University

T.315.C **Achievement and Attribution Theory in the Classroom**

(Division C-Paper Session) 3:15-4:45 Parlor C
CHAIR/DISCUSSANT: *Joan Rankin, U. of Nebraska*
PARTICIPANTS:
Mathematical Teaching and Learning in Kindergarten Classrooms.
Kuei-Er Chung and Susan M. Hegland, Iowa State University
Comparing Epistemological Beliefs about Mathematics and Social Sciences.
Marlene A. Schommer and Kiersten Walker, Wichita State University
School Achievement, Age, and Students' Perception of Parental Concern and Support for Schoolwork.
Jupian J. Leung and Daniel O. Lynch, University of Wisconsin-Oshkosh
Attribution Theory and the High School Teacher.
Lawrence E. Krengel, Northern Illinois Univ.

T.315.D **Statistical Modeling**

(Division D-Paper Session) 3:15-4:45 Parlor D
CHAIR/DISCUSSANT: *Jeffrey B. Hecht, Illinois State University*
PARTICIPANTS:
Structural Equation Modeling: The (Almost) Forgotten Basics.
Ralph O. Mueller, George Washington U.
Exploratory Versus Confirmatory Factor Analysis in Defining Collegiate Physical Fitness.
Tim P. Mead and David L. Legg, U. of Toledo
Application of the Binomial Test of Model Fit: What Research Question is Being Tested?
Isadore Newman, University of Akron; John W. Frass, Ashland University
An Empirical Comparison of Certainty and Likert Scaling Techniques.
Kathleen M. Lux and Rick A. Petosa, Ohio State University
Hierarchical Latent Trait Approach (HLTA) in Test Analysis.
Dimiter M. Dimitrov, Southern Illinois Univ.

T.315.E **Counseling**

(Division E-Paper Session) 3:15-4:45 Parlor E

CHAIR: *Nudie Williams, University of Arkansas-Fayetteville*

PARTICIPANTS:

A Comparative Study of Crisis-Intervention Recommendations Within and Across Professional Groups.

Jeannine De Rose and Ronald R. Morgan, Loyola University of Chicago

An Exploration of the Six Dimensions of Wellness in Graduate Counseling Students.

Sandra L. Staffen, Jane Zimmerman, Annette Fuchs, Laura Bauhof, Angela Evans, Nancy Taylor, and Paula Britton, John Carroll University

Stress Management and Biofeedback with Migraine Headache Patients: Predictors of Success.

Michael LeBlanc, Nancy McCafferty, and Paula Dupuy, University of Toledo; Angele McGrady, Medical College of Ohio

On the Use of Reflection and Self-Evaluation in Education in the Education of Professional Substance Abuse Counselors.

Kenneth A. Gleaves, Moraine Valley Community College

DISCUSSANT: *Thomas Midgette, University of Arkansas-Fayetteville*

T.315.F **Evaluating the Dimensionality of Tests: Rasch Measurement and Factor Analytic Techniques**

(Division I Symposium) 3:15-4:45 Parlor F

CHAIR: *Gene A. Kramer, American Dental Association*

PARTICIPANTS:

Rasch Factor Analysis.

Benjamin D. Wright, University of Chicago

A Comparison of Methods for Determining Dimensionality in Rasch Measurement.

Richard M. Smith, University of South Florida

Rasch vs. Factor Analysis of a Multidimensional Scale.

Kathy E. Green, University of Denver

Identifying Dimensions in the MMPI-2.

Chih-Hung Chang, University of Chicago

DISCUSSANT: *John Michael Linacre, University of Chicago*

T.315.Lin **Teacher Education Alternatives**

(Division K-Paper Session) 3:15-4:45 Lincoln

CHAIR: *Rosemary Schiavi, University of Evansville*

PARTICIPANTS:

Who Should Be Responsible for Teacher Education?

Alice L. Young, Southern Illinois University

A Tale of Two (Non-Traditional) Teachers.

Peggy J. Anderson and Dennis E. Potthoff, Wichita State University

The Analysis of the Transition to Graduate Level Teacher Preparation on a Regional Campus of a Major Research University.

Susan I. Kent, Ohio State University-Newark

Coping and Growing: Peace Corps Fellows in the Urban Classroom.

Ruth Bombaugh, University of Michigan

DISCUSSANT: *Joy McCullough, Trinity Western University*

T.315.Max **Meet the Editors**

(Invited Session) 3:15-4:45 Maximillian

CHAIR: *Richard Pugh, Indiana University*

PARTICIPANTS:

Stephen Benton, Educational Psychology Review

Lyn Corno, American Educational Research Journal

Ayres D'Costa, Mid-Western Educational Researcher

Gene V Glass, American Educational Research Journal, Education Policy Analysis Archives, Psychological Bulletin, Review of Educational Research

Frank Lester, Journal of Research in Mathematics Education

Bill Reese, History of Education Quarterly

Randall Schumacker, Structural Equation Modeling: A Multidisciplinary Journal

T.315.Fifth **School Based/University Collaborative Effort**

(Division K-Alternative Format Session) 3:15-4:45 Fifth Floor Meeting Room

PARTICIPANTS:

Janet T. Bercik, Northeastern Illinois University

Judith Hennig, Illinois School District 63

Ray Kuper, Twain School

Linda Rageb, Nelson School

T.450.Med **Ecological Issues in Education**

(Division G-Paper Session) 4:50-6:00 Medill

CHAIR: *Roger Carlsen, University of Dayton*

PARTICIPANTS:

Social Constructivism and Active Learning Environments: The Development of an Instrument.

Elizabeth J. Oyer and Curtis Jay Bonk, Indiana University

An Ontological Analysis of an Eighth-grade Science Classroom.

Ruth Bombaugh, University of Michigan

Curriculum-Based Measurement: Cultural Bias in Testing.

Susan M. Wilczynski, Indiana State University

T.450.A **Applied Research in the Professions**

(Division I-Paper Session) 4:50-6:00 Parlor A

CHAIR: *Kim M. Hutchinson, Northern Illinois University*

PARTICIPANTS:

Enhancing Learning in Training and Adult Education: A Description of an On-Going Research Program.

Ronald R. Morgan, Loyola University of Chicago; Edward E. Gordon, North American Institute for Training and Educational Research; Judy J. Ponticell, Texas Tech University

A Case Study: Using Functional Assessment Staging for Clinical Diagnosis and for Understanding Progression within the Moderately Severe Stage of Alzheimer's Disease.

Peggy F. Oakerson, Ball State University

A Preliminary Investigation of a Theoretical Model of Perceived Pediatric Nursing Self-Efficacy.

Debra D. Buchman and Beth McBurney, University of Toledo

DISCUSSANT: *Kevin Larkin, American Dental Association*

T.450.B **Innovative Curriculum Perspectives**

(Division B-Poster/Table Session) 4:50-6:00 Parlor B

PARTICIPANTS:

A. Curriculum Development and the GED Test: An Interactive Workshop.

James E. Hawkings, Chicago State University

B. Integrating Critical Thinking Across Correctional Education Curriculum.

Bonnie Kirkpatrick, Ball State University

C. Campus-Based Project in Multicultural Literacy Education.

Rose Mary Scott, U. of Wisconsin-Parkside

D. Outcome-Based Education: Findings and Implications for Wisconsin.

Annette R. Smith and Susan Cramer, University of Wisconsin-Oshkosh

T450.C **Issues in Cognition**

(Division C-Poster/Table Session) 4:50-6:00 Parlor C

PARTICIPANTS:

A. Influence of a Before or After Computer Simulation or Game on Learning From a Physics Text.

Thomas Andre and Charlotte Haselhuhn, Iowa State University

B. Relationships among Three-Dimensional Laboratory Models, Spatial Visualization Ability, Gender, and Earth Science Achievement.

Michael Odell, University of Idaho

C. The Effect of Matching Test Condition to Modality Preference During the Solution of Deductive Reasoning Items.

Cynthia Campbell, Southern Illinois Univ.

T450.D **Qualitative Methodologies**

(Division D-Poster/Table Session) 4:50-6:00 Parlor D

PARTICIPANTS:

A. Getting Started with the Basics of Coding Textual Information.

Rich Hoffman, Miami University; Michael H. Romanowski, Ohio Northern University; Thomas Oldenski, University of Dayton

B. VTLOGANL: Analyzing Video Taped Data.

Jeffrey B. Hecht, Nicole K. Roberts, Perry L. Schoon, and David J. Dwyer, Illinois State University

C. State Mandated Change: A Qualitative Analysis of Responses.

Nancy P. Gibson, Illinois State University

T.4.50.E **Assessments of Behavioral and Cognitive Functioning in Clients and Students with Learning Disabilities**

(Division E-Paper Session) 4:50-6:00 Parlor E

CHAIR/DISCUSSANT: *Eddie Glenn, U. of Arkansas*

PARTICIPANTS:

Behavioral Assessment of Vocational Rehabilitation Clients with Learning Disabilities: Development of Koller Adolescent and Adult Behavior Scale.

Karen D. Multon, James R. Koller, and Gregory A. Holliday, University of Missouri

Levels of Processing and Encoding Specificity in Mild Disabilities.

Yasser Al-Hilawani, James A. Poteet, and Gregory J. Marchant, Ball State University

T.450.F **The Legitimization of African American English in Educational Organization**

(Division G-Alternative Session) 4:50-6:00 Parlor F

CHAIR: *Raquel L. Farmer, University of Illinois*

PARTICIPANTS:

Raquel L. Farmer, University of Illinois

Gail D. Gordon, University of Illinois

T.450.Lin **Teacher Education Goals and Expectations**
(Division K-Paper Session) 4:50-6:00 Lincoln
CHAIR: *Timothy E. Miller, Morehead State University*
PARTICIPANTS:
State and National Goals: Are They Aligned?
Susan R. Cramer, U. of Wisconsin-Oshkosh
Prospective Teacher Educators' Motives for Becoming Teacher Educators and the Potential Impact on the Preparation of Future Teachers.
Joy D. McCullough, Trinity Western Univ.
Consultation in Teacher Education: A Survey of Training, Expectations, and Preferences.
Wendy L. Combs and Lisa A. Bischoff, Indiana State University

T.450.Fifth **Research Relating to Cultural and Multicultural Contexts**
(Alternative Format Session-Town Meeting)
4:50-6:00 Fifth Floor Meeting Room
CHAIR: *Jacqueline Rickman, Chicago Public Schools*
PARTICIPANTS:
Mentoring for Ethnic, Physical, and Gender Equity.
Jacqueline Rickman, Chicago Public Schools
Gender and Ethnic Equity in the Workplace.
Carolyn Bohlen, Northern Illinois University and EPA
Hispanic Early Childhood Intervention.
Myriam Classen, Loyola University and Chicago Lighthouse for the Blind
Special Education and Street Culture.
Marva Bean Christian, Northern Illinois University and Chicago Public Schools
Philosophical Perspectives.
Sharonjoy Jackson, Northern Illinois University and Chicago Public Schools
Technology and Foundational Barriers.
Leon Liddell, Northern Illinois University and Chicago Public Schools
Response to Cultural Diversity: Conceptual Change in Teacher Education Students
Carla Shaw, Northern Illinois University
Special Education and State of Illinois Parent Initiative
SanDee Stroncak, Northern Illinois University and the Illinois State Board of Education

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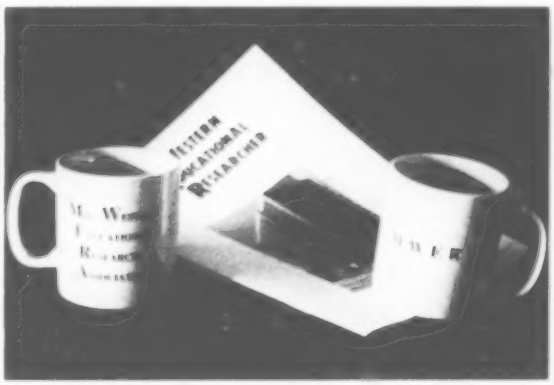
T.6.Max **Cracker Barrel Social**
(Hors d'oeuvres, cash bar, and friendly conversation)
6:00-7:00 Maximillian

T.7.Medill **Issues in Multicultural Education**
(Workshop for teachers, see p. 10) 7:00-9:30 Medill
CHAIR: *Sharon McNeely, Northeastern Illinois University*
SPEAKER: *Eugene Garcia, U.S. Department of Education*

Support MWERA, order an MWERA MUG when you pre-register, or purchase one at the registration desk in the Bismarck lobby.



	Medill	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincoln	Maxi-millian	Walnut Room
8:00-9:00						Coffee Talk E. Garcia	Division Meetings C, D, F, I	Mid-Western Hospitality		
8:20-10:20				C Sym Measuring Lrn & Soc	8:45					
9:00-10:20	Teacher Workshop E. Garcia	A Sym Field-Base Doc Prog	F Paper History & Diversity	| | |	D Paper Testing Issues	K Paper Effect Inst in T. Educ	G Alt Improve Af-Am Ed	Workshop Get Acad Position A	Exhibit	
10:25-11:45	Teacher Workshop E. Garcia							General Business Meeting	Exhibit	
11:55-1:50									Exhibit	Lunch Robert E. Slavin
2:00-3:20	Program Com. Meeting	A Paper Sch Admin Challenges	Follow-up Discussion R. Slavin	K Paper Psych & Assess	D Paper Choosing Right Meth	E Paper Sp. Ed. & Tch Train	B Sym Curr Chng in Science	C Sym Teaching Ed. Psych	Exhibit	
3:25-4:55	Minor Issues Panel	H Sym Systemic Reform	B Paper Curicularst Prof Pref	C Paper Ability Grouping	K Sym T Ed Alt. Clinic Exp	F Paper Policies & Problems	K Alt Profession Dev Schls	Teaching Education Statistics	Exhibit	
5:00-6:00	G Paper Self Concept	K Alt Dev & Whl Lng 6:15	K Paper Assess Pre Serv Tchrs 6:10	C Paper Issues in Cognition	D Paper Topics in Education 6:15	E Paper 16 PF Factor An.	F Inv Mental Mapping	Workshop Keep Acad Position B 6:15	G Paper Soc Contxt of Educ 6:10	

F.8.Lin **Mid-Western Hospitality**
(Complimentary coffee and rolls) 8:00-9:00 Lincoln

F.805.E **Coffee with Eugene Garcia**
(Bring your coffee and roll and join an Informal Conversation) 8:05-8:55 Parlor E
CHAIR: *Sharon McNeely, Northeastern Illinois Univ.*
CONVERSATIONALIST: *Eugene Garcia, Director of Bilingual Education and Minority Language Affairs, U. S. Dept. of Education*

F.810.F **Division Meetings**
(Bring your coffee and roll, review past and plan future with your Division colleagues) 8:10-8:50 Parlor F
DIVISIONS: *C, D, F, I*

F.820.C **From E-Mail to the Bible: Dilemmas in Measuring Scaffolded Learning and Social Interaction**
(Division C-Symposium) 8:20-10:20 Parlor C
CHAIR: Jay Bonk, Indiana University
PARTICIPANTS:
Forms of Assistance and Degree of Collaboration in World Forum Electronics Interactions.
William A. Sugar and Curtis Jay Bonk, Indiana University
E-Mail Communication in Graduate School Courses: Two Illustrations of Teacher and Student Interactions.
E. Sonny Kirkley and John R. Savery,Indiana University
Time to "Connect": Synchronous and Asynchronous Case-Based Dialogue Among Preservice Teachers.
Melissa M. Grabner, Edmund J. Hansen, and Curtis Jay Bonk, Indiana University
The Electronic Classroom as an Arena for Collaborative Learning.
Siat-Moy Chong, Indiana University
The Teaching of Jesus as Re-examined Through a Vygotskian Framework of Social Interaction.
Matthew P. Nussbaum, Indiana University
Emerging Intersubjectivity among Agencies Preparing for Emergency Disaster Respondence.
Russell H. Kushigian, Indiana University
Cutting to the Heart: A Coding of Medical Students' Interactions in Problem-Based Learning Courses.
Yuxi Charles Wang, Indiana University
New Pictures of an Art Room: Observing Peer Interactions and Artistic Development.
Julia M. Matuga, Indiana University
DISCUSSANTS: *John Kun-Han and Curtis Jay Bonk, Indiana University*

F.845.D **Testing Issues**
(Division D-Paper Session) 8:45-10:20 Parlor D
CHAIR/DISCUSSANT: *Isadore Newman, University of Akron*
PARTICIPANTS:
Group Ability Test Versus Teacher Ratings for Predicting Achievement: Where's the Bias?
Brian J. Stone, Wichita State University
Using Neural Net Technology to Enhance the Efficiency of a Computer Adaptive Testing Application.
C. Van Nelson and L. W. Henrikson, Ball State University
The Effects of Test Format and Locus of Control on Test Anxiety.
Namok Choi Bryant and Laura L. B. Barnes, Oklahoma State University
Non-Functioning Options in Multiple-Choice Tests: Another Look.
Gregory J. Cizek and Robert E. Rachor, University of Toledo
Cheating Detection: A Legal Perspective.
David J. Dwyer, Illinois State University

F.9.Med **Multicultural Issues in the Classroom**
(Workshop for classroom teachers only, see p. 10) 9:00-11:45 Medill
CHAIR: *Sharon McNeely, Northeastern Illinois University*
PRESENTER: *Eugene Garcia, U.S. Dept of Education*

F.9.A **Analysis of an Educational Administration Field-Based, Field-Supported Doctoral Program** (Division A Symposium) 9:00-10:20 Parlor A
CHAIR: *Willis J. Furtwengler, Wichita State University*
PARTICIPANTS:
Willis J. Furtwengler, Wichita State University
Carol B. Furtwengler, Wichita State University
Edie Holcomb, Wichita State University
David Hurst, Wichita State University
Melva Owens, Derby School District
DISCUSSANT: *James Carroll, Wichita State University*

F.9.B **Issues in History and Diversity**

(Division F-Paper Session) 9:00-10:20 Parlor B

CHAIR/DISCUSSANT: *Donald Castle, Ashland University*

PARTICIPANTS:

Promoting Cultural Diversity in the University Classroom.

Jennifer N. Humphries and Louise E. Fleming, Ashland University

From Open-Air Classroom to Household Employee: One Woman's Stoty.

Louise E. Fleming, Ashland University

Jenny May Kohler, Schoolteacher.

Louise E. Fleming, Ashland University

F.9.E **Developing Effective Instruction Through Teacher Education**

(Division K-Paper Session) 9:00-10:20 Parlor E

CHAIR/DISCUSSANT: *Gary Russell, Notre Dame College*

PARTICIPANTS:

Instructional Change through Self-Reflection: Coming to Terms with Classroom Practices and Beliefs.

Mary Ann Wham, University of Wisconsin-Whitewater; Susan Davis, Illinois State University

The Effect of Preservice Laserdisc Presentation of Question Types and Wait-Time Use on Questioning and Wait-Time Use in Clinical Experiences.

Stephen R. Wallace, Thomas E. Thompson, and Beth A. Wiegmann, Northern Illinois University

The Effect of Changing the Criteria for STAD Team Awards.

William J. Gnagey and Nora Y. Navarro, Illinois State University

An Analysis of Instruction Under Traditional and Holistic Language Models.

Pamela A. Kahlich, PRC, Inc.

ROBERT E. SLAVIN

John Hopkins University, Director of the Early and Elementary School Program at the Center for Research on Effective Schooling for Disadvantaged Students. Authored over 140 articles and 14 books, including *Educational Psychology: Theory into Practice* (published by Allyn & Bacon who are co-sponsoring Dr. Slavin's address).

How can elementary schools ensure that all students succeed in reading and other skills? This presentation will review research on Success for All, a comprehensive restructuring program for elementary schools serving many at-risk students.

F.9.F **Improving Education for African American Students: Being Part of the Solutions**

(Division G-Alternative Session-Town Meeting)
9:00-10:20 Parlor F
CHAIR: *Linda D. Hayes, Cleveland State University*
PARTICIPANTS:
Education of African American Students: An Educational Administrative Perspective.
Daniel D. Drake, Cleveland State University
Getting a Head Start: Early Childhood and the Head Start Perspective. Head Start, Cleveland
African American Students and Counseling: A Multicultural Approach to Service.
Thomas E. Midgette, University of Arkansas
Exceptionalities: The Physically Challenged African American Students.
Patricia Bettis-Eddie, Beachwood High School
Comer Schools and African American Children.
Hinsdale Bernard, Cleveland State University
ANALYSTS:
Nelson T. Strobert, Lutheran Theological Seminary
Mary Ann Flowers, Cleveland State University

F.9.Lin **Getting and Keeping an Academic Position: Part 1-Getting a Position**

(Workshop-must be registered to attend, pre-register or see registration desk, see p. 10) 9:00-10:20 Lincoln
PARTICIPANTS:
Kim Metcalf, Indiana University
Jerry Jinks, Illinois State University
Carolyn Babione, Emporia State University

F.9.Max **Exhibit Hall**

(Publisher and materials showroom)
9:00-10:20 Maximillian
COORDINATOR: *Sharon McNeely, NE Ill. Univ.*

F.1025.Lin **Business Meeting**

(General business meeting for all to attend-information, input, and graduate student awards)
10:25-11:45 Lincoln
CHAIR: *Richard Pugh, Indiana University*
PARTICIPANTS: *All MWERA Members*

F.1155.Wal **Lunch and announcements**

(Lunch is included with registration, please wear MWERA name tag)
11:55-12:40 Walnut Dining Room
CHAIR: *Richard Pugh, Indiana University*

F.1240.Wal **Success for All**

(Luncheon Address) 12:40-1:50 Walnut Dining Room
CHAIR: *Rick Pugh, Indiana University*
SPEAKER: *Robert E. Slavin, Johns Hopkins U.*
Co-Sponsored by Allyn & Bacon Publishers

F.2.Med **Just Wait Until Next Year**

(1994/95 Program Meeting-Review and Planning Session) 2:00-3:20 Medill
CO-CHAIRS:
Gregory J. Marchant, Ball State University
Sharon McNeely, Northeastern Illinois Univ.
PARTICIPANTS:
Associate Program Chairs, Division Co-Chairs, those wishing to make comments or suggestions concerning this year's meeting, and those interested in serving as Division Chairs or volunteering next year are invited

F.2.A **Challenges to School Administrators**

(Division A-Paper Session) 2:00-3:20 Parlor A
CHAIR: *Marcia Salner, Sangamon State University*
PARTICIPANTS:
Interagency Collaboration for At-Risk Children & Families: A View from the Principal's Chair.
Louise E. Esveld, Univ. of Northern Iowa
Religion and Education: An Administrator's Dilemma.
William R. Hughes, Ashland University
The Educational and Economic Impact of the Ninth Grade Proficiency Test in Selected Ohio School Districts: An Exploratory Implementation Study.
Randy A. Continenza, Chardon Local Schools; A. Al-Rubaiy and Reene Alley, Univ. of Akron
DISCUSSANT: *Mark Myers*

F.2.B **Success and More**

(Informal Follow-up Discussion) 2:00-3:20 Parlor B
DISCUSSANT: *Robert E. Slavin, Johns Hopkins U.*
POSSIBLE TOPICS:
New Developments in Success for All
Roots and Wings, Math Wings
Word Lab (Social Studies & Science), Middle Schools

F.2.C **Psychology and Assessment in Education**

(Division K Paper Session) 2:00-3:20 Parlor
CHAIR: *Mary Ann Wham, Univ. of Wis.-Whitewater*
PARTICIPANTS:
Teaching Educational Psychology Using Primary Sources vs. a Textbook: What Do Students Say?
Karen M. Dutt, Gretchen Zuege, and Jana Murchison, Indiana State University
Use of Informal Medical Assessments to Document Deficits.
Elaine Traynelis-Yurek, Univ. of Richmond; Mary W. Strong, Iowa State University
Interactive Perceptual Psychology: The Human Psychology that Mirrors the Naturalness of Our Total Behavioral System.
Gary Russell, Notre Dame College; Linda Shoare, Center for Professional Advancement
DISCUSSANT: *Thomas Ganser, U. of W.-Whitewater*

F.2.D **Choosing the Right Method**
(Division D-Paper Session) 2:00-3:20 Parlor D
CHAIR: *Patricia Elmore, Southern Illinois University*
PARTICIPANTS:
Choosing a Test Statistic Based on Simultaneous Test Procedures: Monte Carlo Study of MANOVA with Covariance Inequalities.
T. Mark Beasley, St. John's University; Jan Sheehan, Southern Illinois University
Comparison of ANOVA, McSweeney, Bradley, Harwell-Serlin, and Blair-Sawilowsky Tests in the Balanced 2x2x2 Layout.
Lynn D. Kelly, Shlomo S. Sawilowsky, and R. C. Blair, Madonna University
The Application of Gibbs Sampling to Nested Variance Components Models with Heterogenious Within Group Variance.
Rafa M. Kasim, Michigan State University
DISCUSSANT: *Ralph Mueller, George Washington University*

F.2.E **Special Education Teaching and Training**
(Division E-Paper Session) 2:00-3:20 Parlor E
CHAIR: *Isaiah Sessoms, Clarion University*
PARTICIPANTS:
Effectiveness of Categorical Versus Cross-Categorical Programming in Special Education.
Robert G. Harrington and Dick B. Tracy, University of Kansas
Voices in Special Education: A Collaborative Investigation of Beginning Teaching.
Mark P. Mosert, Moorhead State University
How Effective is Special Education? Parents and Teachers Report.
Dick B. Tracy and Robert G. Harrington, University of Kansas
A Comparative Investigation of Reciprocal Teaching and Teacher Directed Strategies Designed to Enhance Social Skills.
Debra Dandeles and Ronald R. Morgan, Loyola University of Chicago
DISCUSSANT: *Richard Allen, University of Arkansas/Cherokee Nation*

MWERA 93 Annual Meeting Fact

Colleagues from 27 states, Canada, Germany, South Africa, and Taiwan attended. Approximately one-third of those attending were graduate students.

F.2.F **Supporting Curricular Change in Science**
(Division B-Symposium) 2:00-3:20 Parlor F
CHAIR: *Mark Jenness, Western Michigan University*
PARTICIPANTS:
Enhancing Science Resources to Support Change.
Mark Jenness, Western Michigan University
The Impact of Science Inservices on Teachers.
Antonio N. Rubino, Western Michigan University
The Role of Administrators in Supporting Science Curricular Change.
Nancy B. Mansberger, Western Michigan University
DISCUSSANT: *Zoe A. Barley, Western Michigan University*

F.2.Lin **Teaching Educational Psychology to Undergraduates (or It's 9:00 O'Clock Monday Morning: What Do We Know and What Do We Do?)**
(Division C-Symposium) 2:00-3:20 Lincoln
MODERATOR/DISCUSSANT: *Joel Levin, University of Wisconsin*
PARTICIPANTS:
Stephen Benton, Kansas State University
Nelson DuBois, SUNY-Oneonta
Ken Kiewra, University of Nebraska
Jack Snowman, Southern Illinois University
Richard Staley, (ORGANIZER) SUNY-Oneonta

F.2.Max **Exhibit Hall**
(Publisher and materials showroom)
2:00-3:20 Maximillian
COORDINATOR: *Sharon McNeely, Northeastern Illinois University*

F.325.Med **Muliticultural Issues in Research and Teacher Education**.
(Division G-Invited Panel) 3:25-4:55 Medill
CHAIR: *Mary Ann Flowers, Cleveland State University*
PARTICIPANTS:
Linking Theory and Practice in Diversity.
Kenneth Addison, Northeastern Illinois University
A Further Commentary on Increasing Minority Faculty Representation in Schools of Education.
Jesus Garcia, University of Illinois
Confronting the "Rumor of Inferiority."
Barbara J. Shade, University of Wisconsin-Parkside

Until we understand the vestiges of our own cultures, we cannot begin to assume to understand those of others.

Kenneth Addison, Northeastern Illinois University

Jesus Garcia

University of Illinois at Urbana-Champaign, authored numerous articles on multicultural and minority issues including articles in the *Kappan* and a book review in the *Mid-Western Educational Researcher.*

In the past three decades, it appears that while few academics have argued against minority recruitment, most have been reticent to assume a leadership role in this area. Most education administrators and faculty have continued to accept the argument of cultural diversity for a minority perspective over cultural pluralism for intellectual diversity.

Far too much attention has been given to the perceived deficits of children of color. The challenge is to identify the strengths of these children which can help them achieve.

Barbara J. Shade, Dean of the School of Education, University of Wisconsin-Parkside

F.325.A **Systemic Reform Strategies: Critical Issues in Effectiveness.**
(Division H-Symposium) 3:25-4:55 Parlor A
CHAIR: *Zoe A. Barley, Western Michigan University*
PARTICIPANTS:
Zoe A. Barkley, Western Michigan University
Nancy B. Mansberger, Western Michigan University
Mary E. Piontek, Western Michigan University
Margaret R. Fritz, Western Michigan University
DISCUSSANT: *Mark Jenness, Western Michigan University*

F.325.B **Issues in the Professional Preparation of Curricularists**
(Division B-Paper Session) 3:25-4:55 Parlor B
CHAIR: *Virginia Ellen Goodman, Chicago State University*
PARTICIPANTS:
Program Requirements in Master's Degree Granting Curriculum Programs.
Linda Behar, University of Florida
A Survey of the Impressions of Economics Departments of the Qualitative Courses Required of Economics Majors.
Victoia E. Young and C. Van Nelson, Ball State University
Problem Solving Strategies of Fifth Grade Students in the Classroom Setting.
William J. Neumeier, Miami University
DISCUSSANT: *Donald J. Reyes, Northern Illinois U.*

F.325.C **Ability Grouping and Curricular Decisions**
(Division C-Paper Session) 3:25-4:55 Parlor C
CHAIR/DISCUSSANT: *Jennifer Fager, University of New Hampshire*
PARTICIPANTS:
Suggestopedia and Its Effects in the Bilingual Classroom.
Mary Assel, Dearborn High School
Individual Differences in Learning Style and Recall of Classroom Instruction.
Jacqueline A. Specht, Huron College; Jack Martin, Simon Fraser University
Instructional Preferences of Academically Talented High School and College Students.
Charles E. Skipper, Miami University
To Group or Not To Group: Is That the Question.
Kathleen B. Mecoli, Miami University

F.325.D **Alternative Clinical Experiences in Teacher Education**

(Division K-Symposium) 3:25-4:55 Parlor D
CHAIR: *Kim Metcalf, Indiana University*
PARTICIPANTS:
A Qualitative Study of a Visually Impaired Preservice Teacher Participating in a Teacher Education Laboratory.
JaDora Sailes, Indiana University
The Relationship between Personality Type and Reflectivity following On-Campus Laboratory Activities.
Amy Baum, Indiana University
The Effects of On- and Off-Campus Clinical Experiences on the Reflective Ability of Preservice Teachers.
Russell Kushigan, Indiana University
The Relationship between Preservice Teachers' Experience and Appreciation for an On-Campus Laboratory Program.
Julie Hutchins, Indiana University
Instructor Behavior during Debriefing in an On-Campus Teacher Education Laboratory.
Aaron Hutchins, Indiana University

F.325.E **Policies and Problems**

(Division F-Paper Session) 3:25-4:55 Parlor E
CHAIR: *Sanda Stroncak, Northern Illinois University*
PARTICIPANTS:
Student Violence Against Teachers: Iconic Case Studies of Hercules, Alexander the Great, Jesus of Nazareth, and the Schoolmaster of Faleria.
Ayers Bagley, University of Minnesota
The National University 1787-1825.
Kenny O. McDougle, Pittsburg State Univ.
Effects of U.S. Educational Policy from 1819-1934 on American Indian Identity.
Maureen Smith, University of Wis.-Oshkosh
Separating Foundations from Fundamentals: Finding the Focus in Teaching Foundations Classes.
Jeffrey Winter, National-Louis University

F.325.F **Professional Development Schools: Developing and Sharing a Knowledge Base**

(Division K-Alternative Format Symposium) 3:25-4:55 Parlor F
CHAIR: *Carol Muskin, National-Louis University*
PARTICIPANTS:
Pat Hulsebosch, National-Louis University
Wendy Stack, Northeastern Illinois University
Mary Daly Lewis, Roosevelt University
George Olson, Roosevelt University

F.325.Lin **Impediments in the Teaching of Research Design and Statistics**

(Division D-Invited Panel-Brief presentations and open discussion) 3:25-4:55 Lincoln
MODERATOR: *John J. Kennedy, Ohio State University*
PANEL:
Robert S. Barcikowski, Ohio University
Joel R. Levin, University of Wisconsin-Madison
Stephen G. Jurs, University of Toledo
Isadore Newman, University of Akron

F.325.Max **Exhibit Hall**

(Publisher and materials showroom) 3:25-4:00 Maximillian
COORDINATOR: *Sharon McNeely, Northeastern Illinois University*

Despite all the flash and fanfare of recent alternative attempts to make statistics and research methodology palatable to graduate students in education, this presenter prefers to teach such content the old-fashioned way: through hard work at developing both conceptual and computational knowledge.
Joel Levin, University of Wisconsin

Life is multivariate!
Robert Barcikowski, Ohio University

Many people use multivariate staitsics for the strangest reasons. The link between motivation and mathematics needs to be explored.
Stephen Jurs, University of Toledo

One of the major problems I see is the increased misuse of statistics due to the availability and ease of access sophisticated statistical programs. This tends to exacerbate the misalignment between the research question of interest and the statistical procedure used: A Type VI Error.
Isadore Newman, University of Akron

F.5.Med **Self-Concept and Student Attitudes**

(Division G-Paper Session) 5:00-6:00 Medill

CHAIR: *Thomas S. Parish, Kansas State University*

PARTICIPANTS:

The Importance of Peers in Forming Students' Actions and/or Attitudes.

Thomas S. Parish, Kansas State University; James R. Necessary, Ball State University

Are We As We Act, or As We Perceive Ourselves.

James R. Necessary, Ball State University; Thomas S. Parish, Kansas State University

How do Teachers' and Professors' Self-Concepts Relate to Their Actions and the Actions of Others.

Thomas S. Parish, Kansas State University; James R. Necessary, Ball State University

F.5.A **Developmentally Appropriate Practice and Whole Language Transformed by Teacher Belief: What Do Poor Children Need?**

(Division K-Alternative Format Session) 5:00-6:15 Parlor A

CHAIR: *Harriet Fayne, Otterbein College*

PARTICIPANTS:

Harriet R. Fayne, Otterbein College

Karen S. Robinson, Otterbein College

DISCUSSANT: *Lenore Wineberg, University of Wisconsin-Oshkosh*

F.5.B **Assessing Preservice Teachers**

(Division K-Paper Session) 5:00-6:10 Parlor B

CHAIR: *Ervin Sparaponi, Saginaw Valley State Univ*

PARTICIPANTS:

Using Writing in Mathematics to Foster Student Reflection.

Patricia A. Pokay, Eastern Michigan Univ.; Carla Tayeh, Eastern Michigan University

Needs Assessment to Train Preservice Teachers: Using A Factor Analytic Study to Refine A Teacher Needs Assessment Instrument.

Charles K. Runyan, Rozanne H. Sparks, and Richard Lipka, Pittsburg State University

Preservice and Inservice Teacher Journals: What Do They Reveal?

Susan R. Cramer, University of Wisconsin-Oshkosh; Ruth A. Koskela, University of Wisconsin-Whitewater

F.5.C **Issues in Cognition**

(Division C Paper Session)) 5:00-6:00 Parlor C

CHAIR: *Jennifer J. Fager, South Dakota State Univ.*

PARTICIPANTS:

A Preliminary Investigation of Retention Test Performance as a Function of Condensed vs. Extended Course Formats.

Alice Corkill Dempster and Frank Dempster, University of Nevada-Las Vegas

Do Everyday Reading Activities Promote Adults' Cognitive Development.

M. Cecil Smith, Kenneth Elliot, and Kim Hutchinson, Northern Illinois University

What Do Adults Read and Why Does it Matter?

M. Cecil Smith, Northern Illinois University

F.5.D **Topics in Education**

(Division D Paper Session) 5:00-6:15 Parlor D

CHAIR: *T. Mark Beasley, St. John's University*

PARTICIPANTS:

Analysis of Social and Professional Networks.

Hildrun Kretschmer, Free Univ. of Berlin

The Lighthouse Parenting Scale: An Application of the Circumplex Model of Parenting.

Elmer A. Lemke and James J. Johnson, Illinois State University

Technologists vs. Educators: Resolving Conflicts in Creating an Interactive Classroom for Teaching Introductory Statistics Via Distance Education.

Perry L. Schoon and Nicole K. Roberts, Illinois State University

DISCUSSANT: *Dennis Leitner, Southern Illinois University*

F.5.E **The Second-Orde: Factor Structure of the 16PF: A Four Factor Solution**

(Division E-Paper Session) 5:00-6:00 Parlor E

CHAIR/DISCUSSANT: *Jerome Tillman, Illinois State University*

PARTICIPANTS:

Joseph Marth, Southern Ohio College

Isadore Newman, University of Akron

F.5.F **The Natural History of Mental Mapping**

(Division F-Invited Address) 5:00-6:00 Parlor F

CHAIR/DISCUSSANT: *Gary Shank, Northern Illinois University*

PRESENTER: *Donald J. Cunningham, Indiana University*

F.5.Lin **Getting and Keeping an Academic Position: Part 2-Keeping a Position**

(Workshop-must be registered to attend, pre-register or see registration desk) 5:00-6:15 Lincoln

PARTICIPANTS:

Jerry Jinks, Illinois State University

Kim Metcalf, Indiana University

Carolyn Babione, Emporia State University

F.5.Max **Social Context of Education**

(Division G Paper Session) 5:00-6:10 Maximillian

CHAIR:*Paula McMurray, Iowa State University*

PARTICIPANTS:

Contextualized Self-Concepts of Musically Talented Students in a Comparative Study.

Rich Hofman and Larry Sherman, Miami University

Daring to Air Dirty Laundry: International Students and School of Education Policy.

Nancy Lien & Relebohile Moletsane, Indiana University

Exploring Teacher and Students' Perspectives in an Early Childhood Classroom Through an Ethnographic Lens.

Paula McMurray, Tricia Windschitl, and Lina Bawarshi, Iowa State University

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F.9.Reg **President's Reception**

(President's reception-everyone is invited to a casual get-together) 9:00-? Regency Suite, 18th Floor

COORDINATOR: *Adria Karle-Weiss, Murray State University*

HOST: *Richard Pugh, Indiana University*

MWERA 94
Over 450 authors, co-authors, session chairs, and discussants make up this year's annual meeting.

	Medill	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincoln	Maximillian
8:00- 9:00							Division Meetings A, E, J	Road to Brown Video	Mid- Western Hospitality
9:00- 10:20								Pres. Address Rick Pugh Distance Education	
10:30- 11:15	E P-T Poster-Tables		K P-T Lives of Teachers						
10:30- 12:00		K Sym Data Base Teacher Follow-up		C Paper Information Processing Study Skills	D Sym Prof Prep 4 Grad Stud 12:30	J Alt Establishing Community & Multicult	G Alt Mentoring & Mediat Multicult		Deans' Forum on Faculty Research
11:00- 12:00								H Sym Group Assessment	
11:20- 12:00	G P-T Early Adolescenc		Poster-Tables MANOVA, Computer, PTS, FOCUS						

S.7.Lob **Fun Run, Walk, Crawl Along the Lakeshore**
(Light exercise route near the Chicago Yacht Club) 7:00-8:00 Bismarck Lobby
ORGANIZER/RUNNER:
Kenneth A. Kiewra, University of Nebraska

S.8.Max **Mid-Western Hospitality**
(Complimentary coffee and rolls)
8:00-9:00 Maximillian

S.805.Lin **The Road to Brown**
(Video Presentation) 8:05-9:05 Lincoln
In recognition of the fortieth anniversary of Brown vs. the Board of Education, a documentary will be shown highlighting the Civil Rights movement and Charles Hamilton Houston's legal assualt on Jim Crow.

S.810.Max **Division Meetings**
(Discussion-bring your coffee and rolls and review past and plan future with your Division colleagues) 8:10-9:05 Maximillian
PARTICIPANTS: *Divisions A, E, J*

S.910.Lin **Research on Distance Education**
(Presidential Address) 9:10-10:20 Lincoln
CHAIR: *Thomas Andre, Iowa State Univ.*
PRESENTER: *Richard C. Pugh, Indiana University*

S.1030.Med **Human Development Relations and Measures**
(Division E-Poster/Table Session)
10:30-11:10 Medill
A. Influence of Mood, Reason, and Consequences of Transgression on Moral Judgment.
Changming Duan, University of Missouri
B. A Confirmatory Factor Analysis of the Child Behavior Checklist: An Exploration of Age and Sex Differences.
Paula J. Britton, John Carroll University; Isadore Newman, University of Akron; Sharon Latkovich, Ashland University; Ronald F. Bobner, Akron Child Guidance Center; Erica Meyers, John Carroll University
C. The Relation Between Adjustment of First-Year College Students and Weight Gain: An Investigation of the "Freshman 15."
Caryn S. Smith and Paula J. Britton, John Carroll University
D. Sex Role Identity and Career Indecision as Predictors of Holland's Congruence.
Gregory T. Eells and John S. C. Romans, Oklahoma State University

Richard C. Pugh

Indiana University, President of the Mid-Western Educational Research Association 1993-1994.

Engaging students at the remote site in interaction with students at the origination site is only a dream--reality suggests "talking heads" is the dominate teaching style in distance education.

S.1030.A **National Database: Revising the Teacher Follow-up Instrument**

(Div. K-Symposium) 10:30-11:15 Parlor A
CHAIR: *William E. Loadman, Ohio State U.*
PARTICIPANTS:
Content Validity.
William E. Loadman, Ohio State U.
Reliability.
Susan M. Brookhart, Duquesne U.
Discussion and Implications.
Beverly Klecker, Ohio State Univ.

S.1030.B **Current Issues in the Lives of Teachers**

(Division K-Poster/Table Session)
10:30-11:15 Parlor B
PARTICIPANTS:
A. Foundational Studies in the Teacher Education Curriculum.
Richard J. Reynolds, Eastern Connecticut State University
B. Teachers' Grading Practices: Who's Doing What and Why?
Robert E. Rachor, Univ. of Toledo
C. Hidden Cost of Education: A Study of Out of Pocket Annual Financial Expenditures of Teachers.
William Olszewski and Kathleen Maury, Mankato State University
D. Are Preservice Teachers Acquiring Skills in Educational Technology, How and Where?
Carol L. Bentley, Chicago State U.

S.1030.C **Information Processing and Study Skills**

(Division C-Paper Session)
CHAIR/DISCUSSANT: *Marlene Schomer, Wichita State University*
PARTICIPANTS:
Writing a Review Paper: Investigating Three Formats for Organizing Data.
Kenneth A. Kiewra, University of Nebraska-Lincoln
How Graphic Organizers Affect Text Learning: Factual, Relational, and Transfer Effects.
Kenneth A. Kiewra, University of Nebraska-Lincoln
An Analysis of the Measurement of Study Strategy.
Wayne I. Gordon, Western Illinois University
Validating Information-Processing Models of Cognitive Flexibility and Learning.
Rodney J. Greer and Ronna F. Dillon, Southern Illinois University

S.1030.D **Professional Preparation: A Symposium for Graduate Students**

(Division D-Symposium)
10:30-12:30 Parlor D
CHAIR: *Dennis W. Leitner, Southern Illinois University*
PARTICIPANTS:
Professional Preparation for a Measurement Statistician at Educational Testing Service.
Anna Kubiak, Educational Testing Service
Professional Preparation for an Evaluation, Research, and Assessment Director at Northern Illinois University.
Tianqi Han, Northern Illinois University
Professional Preparation for a Research Statistician at A.C. Nielson Company.
Malgorzata Seaman, A.C. Nielson Company
Professional Preparation for an Evaluation Specialist with Arthur Andersen & Co.
Terry L. Shoemaker, Arthur Andersen & Co. and IMPACT Consulting
Professional Preparation to Become a University Professor at the University of North Texas.
Randall Schumacker, University of North Texas
DISCUSSANT: *Patricia Elmore, Southern Illinois University*

S.1030.E **Establishing Community Between Higher Education, Public Ed., and Self: An Effort of Compromise in Infusing Multiculturalism**

(Division J-Alternative Sesssion-Conversation Session) 10:30-12:00 Parlor E
CHAIR: *Larry McNeal, Illinois State Univ.*
PARTICIPANTS:
Joseph R. Higlam and Mary Ann Bard, Illinois State University

S.1030.F **Mentoring and Mediation in a Multicultural Society**

(Division G-Alternative Session-Discussion)
10:30-12:00 Parlor F
MODERATOR: *Carla Shaw, Northern Illinois University*
PARTICIPANTS:
Response to Cultural Diversity: Conceptual Change in Teacher Education.
Carla Shaw, Northern Illinois Univ.
Mentoring for Ethnic, Physical, and Gender Equality.
Jacqueline Rickman, Chicago Public Schools
Gender and Ethnic Equity in the Workplace.
Carolyn Bohlen, Northern Illinois University and E.P.A.
Hispanic Early Childhood Intervention.
Myriam Classen, Loyola University and Chicago Lighthouse for the Blind
Special Education and Street Culture.
Marva Bean Christian, Northern Illinois University and Chicago Public Schools
Philosophical Perspectives.
Sharonjoy Jackson, Northern Illinois Univ. and Chicago Public Schools
Technology and Foundational Barriers.
Leon Liddell, Northern Illinois Univ. and Chicago Public Schools
Special Education and State of Illinois Parent Initiative.
SanDee Stroncak, Northern Illinois University and Illinois State Board of Education

S.1030.Max **Deans' Forum on Research, Faculty Roles, and Rewards**

(Open Discussion among deans, faculty, and future faculty) 10:30-12:00 Maximillian
CHAIR: *Roy A Weaver, Ball State University*
PARTICIPANTS:
Genevieve Lopardo, Dean, College of Education, Chicago State University
Charles E. Stegman, Dean, College of Education, Northern Illinois University
Roy A. Weaver, Dean, Teachers College, Ball State University

S.11.Lin **Group Assessment in a Large Scale Science Assessment: First Year Results**

(Division H-Symposium)
11:00-12:00 Lincoln
CHAIR: *Lori J. Nebelsick-Gullett, University of Kansas*
PARTICIPANTS:
Mark R. Pomplun, University of Kansas
Kim Veverka, University of Kansas
DISCUSSANT: *Larry Lyman, Emporia State University*

Roy A. Weaver

Received his undergraduate degree from Ball State University and currently serves as the Dean of Ball State's Teachers College.

Is the production of faculty research meaningful or simply a ritual for promotion and tenure decisions?

S.1120.Med **Early Adolescence**

(Division G-Poster-Table Session)
11:20-12:00 Medill
PARTICIPANTS:

A. Attitudes of Middle-School Students and Their Parents about Education in Physical Science, Biological Science, and Mathematics.

Charlotte Haselhuhn, Thomas Andre, Myrna Whigham, Iowa State University; G. Henry Veldhuis, Northwestern College

B. An Examination of the Attributional Styles of Ninth-Grade Students Who Dropped Out.

Carmen Montecinos, University of Northern Iowa

C. Barriers to Caring: Early Adolescents' Perspective.

Maria M. Ferreira and Kris Bosworth, Indiana University

S.1120.B **Poster-Table Session**

(Poster/Table Session) 11:20-12:00 Parlor B
PARTICIPANTS:

A. MANOVA and Discriminant and Canonical Analyses: Selected Problems and Suggestions Relative to How to Deal with Them.

Kenneth H. Strand, Illinois State University; Bernard Cahill and Nancy Smith, University of Illinois College of Medicine at Peoria; Douglas Dirks, West 40 Educational Service Center No. 5

B. The Effects of the FOCUS Model on Teacher Perception, Efficacy, and Application in the Classroom.

Gary F. Russell and Kathy Mrsnik, Notre Dame College

C. Removal of Computer Anxiety.

Mian M. Yusuf, University of Wisconsin-Parkside

D. Constructs Underlying Student Perceptions of Parents, Teachers, and Schools.

Sharon Paulson, Gregory J. Marchant, Barbara Rothlisberg, Ball State University

MWERA 95 may be a year away

but preparations have already begun. With your help we can make next year's annual meeting a great one.

Contact:

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(312) 794-2788

Addison, Kenneth - F.325.Med
Adler, Jay - T.845.Lin - F.1025.Lin
Adler, Jay C. - T.845.Lin - F.2.Med
Al-Hilawani, Yasser - T.450.E
Al-Rubaiy, Kathy - T.1220.C
Al-Rubaiy, Al - T.1220.C - F.2.A
Allen, Richard - F.2.E
Alley, Reene - F.2.A
Alley, Robert - T.145.C
Almo, Charles D. - T.1050.Fifth
Anderson, Jr., Charles C. - T.845.Lin - T.6.Max - F.1025.Lin
Anderson, Peggy J. - T.315.Lin
Andre, Thomas - T.845.Lin - T.450.C - T.6.Max - F.1025.Lin - S.910.Lin - S.1120.Med
Appel, Michelle - T.145.Med
Archer, Thomas M. - W.1.C
Arenz, Bernard W. - T.145.Med
Assel, Mary - F.325.C
Babione, Carolyn - F.9.Lin - F.5.Lin
Badioli, Bernard - T.145.Fifth
Bagley, Ayers - F.325.E
Bainer, Deborah L. - T.810.Max - T.145.Max
Bakken, Linda - T.845.Lin - F.1025.Lin
Baldwin, Grover H. - T.315.A
Barcikowski, Robert - T.845.Lin - F.1025.Lin - F.325.Lin
Bard, Mary Ann - S.1030.E
Barley, Zoe A. - F.9.B - F.325.A

Program Additions and Corrections

Although efforts have been made to make the information in this program accurate and complete, errors and omissions unfortunately occur. Please contact Greg Marchant no later than October 1st with any necessary changes and additions. They will be included in an addendum sheet included in the registration packet:

Greg Marchant
Educational Psychology
Ball State University
Muncie, IN 47306
(317) 285-8505
00gjmarchant@bsuvc.bsu.edu

Barnes, Laura L.B. - T.1050.Med - T.145.D - F.810.F - F.845.D - F.2.Med
Bauhof, Laura - T.315.E
Baum, Amy - F.325.D
Bawarshi, Lina - F.5.Max
Beasley, T. Mark - F.2.D - F.5.D
Bedard, Bea - T.145.B
Behar, Linda S. - T.810.Max - T.1050.B - F.2.Med - F.325.B
Bendixen-Noe, Mary - W.12.A - F.2.Med
Bentley, Carol L. - S.1030.B
Benton, Stephen - T.845.Lin - .315.Max - F.1025.Lin - F.2.Lin
Bercik, Janet T. - T.315.Fifth
Bergstrom, Betty - T.1220.Lin
Bernard, Hinsdale - F.2.F
Best, Kathleen - T.1050.F
Bettis-Eddie, Patricia - F.2.F
Bischoff, Lisa A. - T.450.Lin
Blair, R. C. - F.2.D
Bobner, Ronald F. - S.1030.Med
Bohlen, Carolyn - T.450.Fifth - S.1030.F
Bombaugh, Ruth - T.315.Lin - T.450.Med
Bonk, Curtis Jay - T.450.Med - F.820.C
Bosworth, Kris - S.1120.Med
Bramfeld, Anna - T.145.F
Brand, William J. - T.1220.Max
Britton, Paula J. - T.315.E - S.1030.Med
Brookhart, Susan M. - T.845.Lin - T.6.Max - F.1025.Lin - S.1030.A
Brown-Wright, Dianne - T.1220.C
Bryant, Namok Choi - F.845.D
Bucey, Barbara A. - T.315.A
Buchman, Debra D. - T.450.A
Cahill, Bernard - S.1120.B
Cameron, Bradley - T.315.Med
Campbell, Cynthia - T.450.C
Campbell, Mary B. - T.145.Med
Carlsen, Roger - T.145.B - T.315.B - T.450.Med
Carroll, Frances - T.1050.Fifth
Carroll, James - F.9.A
Castle, Donald - T.845.Lin - F.810.F - F.9.F - F.1025.Lin - F.2.Med
Chang, Chih-Hung - T.315.F
Chase, Clinton - T.145.D
Chiang, Linda H. -T.1050.C
Chong, Siat-Moy - F.820.C
Christian, Marva Bean - T.450.Fifth - S.1030.F
Chung, Kuei-Er - T.315.C
Cirignano, Bonnie L. - T.1050.B
Cizek, Gregory J. - T.145.D - F.845.D
Clark, Frances - T.145.C
Classen, Myriam - T.450.Fifth - S.1030.F
Collins, Burton A. - T.145.B
Combs, Wendy L. - T.450.Lin
Continenza, Randy A. - F.2.A
Cooley, Van C. - T.1220.F
Corno, Lyn - W.8.Max, T.930.Max, T.1050.Max, T.315.Max
Cox, Susan M. - T.315.A
Cramer, Susan R. - T.50.B - T.450.Lin - F.5.B
Creswell, John W. - T.315.B
Cummings, Corenna C. - T.810.Max - T.145.A - F.2.Med
Cunningham, Donald J. - F.5.F
D'Costa, Ayres G. - T.845.Lin - T.315.Max - T.6.Max - F.1025.Lin
Dam, Tom Van - T.1050.Fifth
Dandeles, Debra - F.2.E
Davis, Susan - F.9.E
De Rose, Jeannine - T.315.E
Dempster , Alice Corkill - F.5.C
Dempster, Frank - F.5.C
Deville, Craig W. - W.1.E - T.1050.Med
Didham, Cheryl - T.1220.Med
Dillon, Ronna F. - S.1030.C
Dimitrov, Dimiter M. - T.315.D
Dinero, Thomas E. - T.1050.Med
Dirks, Douglas - S.1120.B
Dorsch, Nina - T.145.A
Drake, Daniel D. - F.2.F
Duan, Changming - S.1030.Med
DuBois, Nelson - F.2.Lin
Dult, Karen M. - T.145.Lin
Dupuy, Paula - T.845.Lin - T.315.E
Dutt, Karen M. - F.2.C
Dwyer, David J. - T.450.D - F.845.D
Eells, Gregory T. - S.1030.Med
Elliot, Kenneth - F.5.C
Elmore, Patricia - F.2.D - S.1030.D
Erion, R.L. - T.315.B
Esveld, Louise E. - F.2.A
Evans, Angela - T.315.E
Fager, Jennifer - T.845.Lin - F.810. F - F.1025.Lin - F.2.Med
Farmer, Raquel L. - T.450.F

Fayne, Harriet R. - F.5.A
Ferreira, Maria M. - S.1120.Med
Finley, Mary K. - T.145.F
Fleming, Louise E. - T.1050.D - F.9.F
Flowers, Mary Ann - T.810.Max - T.145.F - F.2.F - F.2.Med
Fox, Christine - T.1050.Med
Frass, John W. -T.315.D
Freiberg, Melissa R. - T.145.C
Fritz, Margaret R. - F.325.A
Fuchs, Annette - T.315.E
Fuller, Roberta - T.1050.C
Furtwengler, Carol B. - T.145.C - F.9.A - F.2.Med - S.810.F
Furtwengler, Willis J. - F.9.A
Ganser, Thomas M. - T.145.C - F.2.C
Garcia, Eugene - T.7.Med - F.805.E - F.9.Med
Garcia, Jesus - F.325.Med
Gariglietti, Gianna M. - T.1220.F
Gedeon, Julie - T.1050.Med
Gerhard, Fran Peterman - W.1.D
Gibson, Nancy P. - T.450.D
Giebelhaus, Carmen R. - W.12.A - T.845.Lin - F.2.Med
Glass, Gene V - T.1220.Max - T.315.Max
Gleaves, Kenneth A. - T.315.E
Glenn, Eddie - T.450.E - F.2.Med - S.810.F
Gnagey, William J. - F.9.E
Goggins, Ellen - T.1220.C
Goodman, Virginia Ellen -
Goodman, Virginia E. - T.810.Max - T.1050.B - F.2.Med - F.325.B
Gordon, Edward E. - T.450.A
Gordon, Gail D. - T.450.F
Gordon, Wayne I. - S.1030.C
Gosmure, Doreen - T.315.B
Grabner, Melissa M. - F.820.C
Green, James E. - T.315.B
Green, Kathy E. - T.315.F
Greer, Rodney J. - S.1030.C
Grossman, John A. - T.1220.Med
Han, Tianqi - S.1030.D
Hannah, Fred - T.1050.F
Hansen, Edmund J. - F.820.C
Harrington, Jeanne - T.315.B
Harrington, Robert G. - T.2.E
Haselhuhn, Charlotte- T.450.C - S.1120.Med
Hawking, James - T.450.B
Hayes, Linda D. - T.810.Max - F.2.Med - F.2.F
Hecht, Jeffery B. - T.315.D - T.450.D - F.810. F - F.2.Med
Hegland, Susan M. - T.315.C
Hennig, Judith - T.315.Fifth
Henriksen, L.W. - T.1220.F - F.845.D
Higlam, Joseph R. - S.1030.E
Hines, Edward R. - T.1220.B
Hoffman, Nancy - T.145.Fifth
Hofmann, Rich - T.450.D - F.5.Max
Holcomb, Edie L. - T.1050.A - F.9.A
Holliday, Gregory A. - T.450.E
Hollingsworth, Sandra - T.145.Max
Howard, Sandy - T.315.B
Hruby, Paula Jo - T.1050.F - T.315.B
Hughes, William R. - F.2.A
Hulsebosch, Pat - F.325.F
Humphries, Jennifer N. - F.9.F
Hurst, David - F.9.A
Hutchins, Aaron - F.325.C
Hutchins, Julie - F.325.C
Hutchinson, Kim M. - T.1220.D - T.450.A - F.810.F - F.2.Med - F.5.C
Jackson, Sharonjoy - T.450.Fifth - S.1030.F
Jacobs, Yvonne - T.315.B
Jason, Martin H. - T.1050.Fifth
Jenness, Mark - F.9.B - F.325.A
Jensen, Sharon J. - T.145.Lin
Jinks, Jerry - F.9.Lin - F.5.Lin
Johnson, James J. - F.5.D
Jurs, Stephen - T.845.Lin - F.1025.Lin - F.325.Lin
Kahlich, Pamela A. - F.9.E
Kalaian, Hripsime A. - T.1220.D
Kardash, Carolanne - T.845.Lin - F.1025.Lin
Karle-Weiss, Adria - T.845.Lin - T.6.Max - F.9.Reg
Kasim, Rafa M. - F.2.D
Kaufield, Clint - T.1220.A
Keiser, Jane M. - T.145.A
Keller, Daniel L. - T.1220.Med
Kelley, D. Lynn - F.2.D
Kennedy, John J. - W.1.F - F.325.Lin
Kent, Susan - T.315.Lin
Kiewra, Kenneth A. - T.845.Lin - T.6.Max - F.1025.Lin - F.2.Lin - S.7.Lob - S.1030.C
Killian, Joyce E. - T.145.Fifth
Kirkley, E. Sonny - F.820.C
Kirkpatrick, Bonnie - T.450.B
Klass, Patricia H. - T.1050.Med - T.1220.F
Klecker, Beverly - S.1030.A
Kline, Charles E. - T.315.A
Kline, Frank - T.1220.Med - T.145.C
Knapp, Thomas - T.845.Lin - F.1025.Lin
Koller, James R. - T.450.E
Koriath, Kirby - T.1220.B
Koskela, Ruth A. - F.5.B
Kramer, Gene A.- T.1220.D - T.315.F
Krengel, Lawrence E. - T.315.C
Kretschmer, Hildrun - F.5.D
Kubiak, Anna - S.1030.D
Kun-Han, John - F.820.C
Kuper, Ray - T.315.Fifth
Kus-Patena, Sophie T. - T.315.A
Kushigian, Russell H. - F.820.C - F.325.C
Lambdin, Diana V. - T.145.A
Lambert, Judy C. -T.1050.C
Larkin, Kevin - T.1220.D - T.450.A - F.810.F - F.2.Med
Lasley, Thomas J. - T.315.Max
Latkovich, Sharon - S.1030.Med
LeBlanc, Michael - T.315.E
Legg, David L. - T.315.D
Leitner, Dennis W. - F.5.D - S.1030.D
Lemke, Elmer A. - F.5.D
Lester, Frank - T.145.Max
Leung, Jupian J. - T.1050.E - T.315.C
Levin, Joel R. - F.2.Lin - F.325.Lin
Lewis, Mary Daly - F.325.F
Liddell, Leon - T.450.Fifth - S.1030.F
Lien, Nancy - F.5.Max
Liftendahl, Thomas - T.1220.Fifth
Linacre, John Michael - W.1.E - T.315.F
Lipka, Richard - T.845.Lin - T.315.Med - F.1025.Lin - F.5.B
Lipsett, Laura - T.1220.Med
Loadman, William E. - T.145.A - S.1030.A
Lopardo, Genevieve- S.1030.Max
Lukin, Leslie E. - T.845.Lin - F.1025.Lin
Lunz, Mary E. - W.1.E
Lux, Kathleen M. - T.315.D
Lyman, Larry - S.11.Lin
Lynch, Daniel O. - T.1050.E - T.315.C
Mackley, Holly D. - T.145.F
Maki, Michele D. - T.315.A
Manges, Charles D. - W.315.A - T.145.E
Mansberger, Nancy B. - F.9.B - F.325.A
Marchant, Gregory J. - W.8.Max - T.845.Lin - T.930.Max - T.6.Max - T.450.E - F.1025.Lin - F.2.Med - S.1120.B
Marso, Ronald N. - T.145.C
Marth, Joseph R. -T.1220.C - F.5.E
Martin, Jack - F.325.C
Matuga, Julia M. - F.820.C

Mau, Wei-Cheng - T.1220.F
Maury, Kathleen -T.145.C - S.1030.B
McBurney, Beth - T.450.A
McCafferty, Nancy - T.315.E
McCullough, Joy - T.845.Lin - T.315.Lin - T.450.Lin - F.1025.Lin - F.2.Med
McDougle, Kenny O. - F.325.E
McGrady, Angele - T.315.E
McMurray, Paula - F.5.Max
McNeal, Larry - T.1050.E - S.1030.E
McNeely, Sharon - T.845.Lin - T.6.Max - T.7.Med - F.805.E - F.9.Med - F.1025.Lin - F.2.Med - F.325.Max
Mead, Tim P. - T.315.D
Mecoli, Kathleen B. - F.325.C
Metcalf, Kim - T.810.Max - T.845.Lin - T.315.Max - F.9.Lin - F.5.Lin - F.1025.Lin - F.325.D
Meyers, Erica - S.1030.Med
Michaelis, Karen - T.1050.A
Midgette, Thomas - T.845.Lin - T.1220.E - T.315.E - F.1025.Lin - F.2.F
Migden, Joseph - T.315.A
Miller, Timothy E. - T.450.Lin
Miller, L. E. - T.145.B
Mitchell, Jacqueline - T.1220.A
Moletsane, Relebohile - F.5.Max
Montecinos, Carmen - T.1220.C - S.1120.Med
Moore, Lou Anna - T.145.A
Moore, Marilyn - T.1220.F
Morgan, Ronald R - T.315.E - T.450.A - F.2.E
Morrow, Linda E. - W.12.A - F.2.Med
Mostert, Mark P. - T.145.Lin - F.2.E
Moulton, Mark H. - T.1220.Lin
Mrsnik, Kathy - S.1120.B
Mueller, Ralph O. - T.845.Lin - T.145.D - T.315.D - T.6.Max - F.1025.Lin - F.2.D
Mullan, Patricia B. - T.1220.D
Multon, Karen D. - T.450.E
Murchison, Jana - F.2.C
Muskin, Carol - F.325.F
Myers, Mark - F.2.A
Navarro, Nora Y. - F.9.E
Nebelsick-Gullett, Lori - T.845.Lin - F.1025.Lin - S.11.Lin
Necessary, James R. - F.5.Med
Nelson, C. Van - T.1220.F - F.845.D - F.325.B
Neumeier, William J. - F.325.B
New, Clara A. - T.145.F
Newman, Isadore - T.810.Max - T.845.Lin - T.1220.C - T.315.D - F.845.D - F.1025.Lin - F.2.Med - F.325.Lin - F.5.E - S.1030.Med
Nolte, Connie - T.1050.A
Nussbaum, Matthew P. - F.820.C
Oakerson, Peggy F. - T.450.A
Odell, Michael - T.450.C
Okoro, Daniel - T.145.B
Oldenski, Thomas - T.450.D
Olson, George - F.325.F
Olszewski, William -S.1030.B
Owens, Melva - F.9.A
Oyer, Elizabeth J. - T.450.Med
Parish, Thomas S. - F.5.Med
Paulson, Sharon E. - S.810.F - T.1050.E - F.2.Med - S.1120.B
Pereira, Peter - T.1050.B
Petosa, Rick A. - T.315.D
Pierce, Jean W. - T.1050.D
Pigge, Fred L. - T.145.C
Pintrich, Paul - W.8.Max
Piontek, Mary E. - F.325.A
Pitruzzelo, Tony - T.1220.Lin
Place, A. Will - T.1220.A - F.2.Med - S.810.F
Pokay, Patricia A. - F.5.B
Pomplun, Mark R. - S.11.Lin
Ponticell, Judy J. - T.450.A
Post, Donna M. - T.145.Fifth
Poteet, James A. - T.450.E
Potthoff, Dennis E. - T.1220.Med - T.145.C - T.315.Lin
Powell, James - W.1.D
Price, Jay - T.145.Lin
Prokosch, Neil E. -T.1220.B
Pugh, Richard C. - T.845.Lin - T.1220.Max - T.315.Max - T.6.Max - F.1025.Lin - F.1125.Wal - F1240.Wal - F.9.Reg - S.910.Lin
Rachor, Robert E. - T.145.D - F.845.D - S.1030.B
Rageb, Linda - T.315.Fifth
Ramanathan, Hema - T.1220.Med
Rankin, Joan - T.315.C
Reese, Bill - T.145.Max
Reid, John M. - T.1050.Med
Rekkas, Alexandria - T.145.Med
Reyes, Donald J. - F.325.B
Reynolds, Richard J. -S.1030.B
Rickman, Jacqueline - T.450.Fifth - S.1030.F
Rifkin, Alison - T.1050.E
Roberts, Nicole K. - T.450.D - F.5.D
Roberts, Thomas E. - T.1050.F - T.315.B
Robinson, Mary Ann - T.1220.C
Robinson, Karen S. - F.5.A
Rogers, Bruce G. - T.145.D
Romanowski, Michael H. - T.450.D
Romans, John S. C. - S.1030.Med
Rothlisberg, Barbara - S.1120.B
Rubino, Antonio N. - F.9.B
Runyan, Charles Kent - T.315.Med - F.5.B
Rusch, Edith A. - T.1220.A - T.315.A
Russell, Gary F. - T.1050.D - F.9.E - F.2.C - S.1120.B
Sailes, JaDora - F.325.D
Salner, Marcia - F.2.A
Sandoval, Terri - T.145.B
Savery, John R. - F.820.C
Sawilowsky, Shlomo S. - F.2.D
Schiavi, Rosemary F. -T.145.Med - T.315.Lin
Schommer, Marlene - T.845.Lin - T.315.C - F.1025.Lin - S.1030.C
Schoon, Perry L. - T.450.D - F.5.D
Schrader, Tom - T.145.A
Schraw, Gregory - T.845.Lin - F.1025.Lin
Schumacker, Randall E. - W.315.B - T.315.Max - S.1030.D
Schunk, Dale - W.8.Max
Scott, Rose Mary - T.845.Lin - T.450.B - F.1025.Lin
Seaman, Malgorzata - S.1030.D
Sessoms, Isaiah - F.2.E - T.1220.E
Shade, Barbara J. - F.325.Med
Shank, Gary D. - T.1220.Fifth - F.810.F - F.2.Med - F.5.F
Sharp, William L. - T.1050.A - T.1220.A
Shaw, Carla - T.450.Fifth - S.1030.F
Sheehan, Jan - F.2.D
Shelton, Terry - T.1220.E
Sherman, Larry - F.5.Max
Shoare, Linda - T.1050.D - F.2.C
Shoemaker, Terry L. - S.1030.D
Skipper, Charles E. - F.325.C
Slavin, Robert E. - F.1240.Wal - F.2.B
Smith, Annette R. - T.450.B
Smith, Caryn S. - S.1030.Med
Smith, M. Cecil - T.845.Lin - F.810.F - F.1025.Lin - F.2.Med - F.5.C
Smith, Doug - T.1220.Med
Smith, Maureen - F.325.E
Smith, Nancy - S.1120.B
Smith, Richard - T.1050.Fifth
Smith, Richard M. - T.315.F
Smith, Sonja J. - T.1050.C - T.145.Med

Snowman, Jack - T.845.Lin - T.6.Max - F.1025.Lin - F.2.Lin
Sparaponi, Ervin - F.5.B
Sparks, Rozanne H. - T.315.Med - F.5.B
Specht, Jacqueline A. - F.325.C
Stack, Wendy - F.325.F
Staffen,Sandra L. - T.315.E
Staley, Richard - F.2.Lin
Steck, Barbara A.- T.1220.A
Stegman, Charles E. - S.1030.Max
Steinley, Gary - T.315.B
Stone, Brian - F.845.D
Stone, Gregory Ethan - T.1220.D
Strand, Kenneth H. - S.1120.B
Strobert, Nelson T. - F.2.F
Stroncak, SanDee -T.450.Fifth - F.325.E - S.1030.F
Strong, Mary W. - F.2.C
Struyk, L. Ruth - T.1220.C
Suddick, David E. - T.1050.Med - T.145.B
Sudzina, Mary R. - T.845.Lin - T.145.Lin - F.1025.Lin
Sugar, William A. - F-820-C
Sullivan, Joan - T.315.B
Summers, Carl R. - T.1220.B - T.315.B
Summers, Marcia - T.1220.B - T.315.B
Surber, John R. - T.845.Lin - T.6.Max - F.1025.Lin
Tam, Hak Ping - W.1.F
Tatum, Donna Surges - T.1220.Lin
Tayeh, Carla - F.5.B
Taylor, Nancy - T.315.E
Thiel, William B. - T.315.A
Thompson, Jay C. - T.1220.F
Tillman, Jerome - T.1220.E - F.5.E
Timm, Joan S. - T.1220.F - T.145.F
Timm, Linda - T.1220.B
Tracy, Dick B.- F.2.E
Traynelis-Yurek, Elaine- F.2.C
Turetzky, Susan - T.1050.E
Urquhart, Marilyn K. - T.1050.D
Veldhuis, G. Henry - S.1120.Med
Velotta, Cynthia L. - T.145.C
Veverka, Kim - S.11.Lin
Viro, Michelle Beabout - T.1050.E
Walker, Kiersten - T.315.C
Wallace, Stephen R. - F.9.E
Walls, Scydonia A. - T.1050.B
Wan, Yiping - T.1050.Fifth
Wang, Yuxi Charles - F.820.C
Weaver, Roy A. - S.1030.Max
Wham, Mary Ann - F.9.E - F.2.C
Whigham, Myrna - S.1120.Med
Wiegmann, Beth A. - F.9.E
Wigle, Stanley E. - W.315.A - T.145.E
Wilcox, Daryl J. - T.145.E
Wilczynski, Susan M. - T.450.Med
Wilkins, Elizabeth A. - T.1220.Med
Williams, Donald A. - T.1220.Med
Williams, E. Jane - T.845.Lin - T.6.Max - F.1025.Lin
Williams, J. Scott - T.1220.Max
Williams, Nudie E. - T.1220.E - T.315.E
Wilson, Martha - S.810.F
Windschitl, Tricia - F.5.Max
Wineberg, Lenore - F.5.A
Winter, Jeffrey - F.325.E
Witteman, Barbara - T.1050.C
Wojogbeh, Daniel - T.145.C
Woodward, Peggy G. - T.145.B
Woolfolk Hoy, Anita E. - T.145.Max
Wright, Benjamin D. - T.1220.Lin - T.315.F
Young, Alice - T.315.Lin
Young , Victoia E. - F.325.B
Yusuf, Mian M. - S.1120.B
Zbikowski, John M. - T.145.C
Zigler, Ted A. - T.1050.A
Zimmerman, Jane - T.315.E
Zomeren, Wayne Van - T.1220.B - S.810.F

Please note that only first authors were scheduled to avoid conflicting presentations.

ability grouping F.325.C
academic achievement T.1050.B -T.1220.F - F.2.E- T.315.A
academically challenged T.145.B
activity theory F.820.C
adaptive testing T.1220.D - F.845.D
administrative competencies T.1050.A
administrators T.315.A
adult students T.145.B
adult education T.1220.C - T.450.A - T.450.B
adult cognition T.145.B
adult literacy T.450.C
African American Children F.9.F
African American English T.450.F
African American T.1220.A
African American males T.1220.E
age difference T.1050.E - S.1030.Med
alternative teaching/learning T.145.A
alternative certification T.315.Med
alternative assessment W.315.A
American Indian F.325.E
assessment T.1050.B - T.1220.E - F.2.E
attention deficit hyperactivity T.1050.E
attitude assessment T.1050.C
attitudes T.1050.D
attribution T.315.C
authentic assessment W.315.A
barriers S.1030.F - S.1120.Med
Bayesian analysis F.2.D
beginning teachers T.145.C
behavioral assessment T.450.E
beliefs T.1050.D
bias F.845.D
bilingual F.325.C
career S.1030.Med
caring S.1120.Med
case studies T.145.D
categorical data W.1.F
causal modeling T.315.D
certainty method T.315.D
change strategies F.325.A
cheating indices F.845.D
child abuse T.315.Lin
child behaviorchecklist S.1030.Med
children's literacy T.145.F
circumplex model F.5.D
clinical experiences F.325.D
coding T.450.D
cognitive flexibility S.1030.C
collaboration T.315.Fifth
collaborative research F.2.E
college teaching T.315.B
complexity T.315.A
computer anxiety S.1120.B
computer-assisted instruction T.1050.B - F.9.E - S.1120.B
conceptual change T.1050.D
consciousness theory T.1050.F
constructivism F.5.F
consultation T.450.Lin
cooperative groups S.11.Lin
cooperative learning F.9.E
cooperative teachers T.1220.Med
counseling T.315.E
counselor education T.315.E
crisis intervention T.315.E
criterion referenced tests T.145.Lin
critical thinking T.450.B
cross cultural T.1220.F
cultural factors T.1220.F
cultural diversity F.9.B
curricular adaptations F.325.C
curriculum T.1050.B - T450.B
curriculum specialists F.2.F
curriculum differentiation T.1050.B
curriculum change F.325.B
curriculum research T.1050.B - F.2.F
deductive reasoning T.450.C
dev. appropriate practice F.5.A
development S.1030.Med
DIF T.1050.Med
distance education F.5.D
diversity S.1030.F
domain specific knowledge T.315.C
drop-out T.1220.C
drug educatio T.315.B
early field experience T.1220.Med
eastern thought T.1050.F
economic impact F.2.A
educational reform T.450.D
educational history F.325.E
educational community S.1030.E
educational psychology F.2.C - F.2.Lin
efficacy T.1220.A
encoding specificity T.450.E
episodic memory F.325.C
epistemological beliefs T.315.C
evaluation T.1220.C - T.145.A - F.2.E
expert-novice T.1050.Med
facets W.1.E
factor structures F.5.E
factor analysis T.315.F
faculty productivity T.1220.B

family literacy	T.1220.C
field placement	T.145.Med
field experience	T.145.Med
fit	T.1220.D
focus groups	W.1.C
FOCUS model	S.1120B
follow-up studies	S.1030.A
foundational studies	S.1030.B
foundations	F.325.E
frames analysis	T.145.A
freshman adjustment	S.1030.Med
freshman weight gain	S.1030.Med
full inclusion	T.145.E
functional assessment	T.450.A
gain scores	T.145.Lin
Gibb sampling	F.2.D
Goals 2000	T.450.Lin
grade inflation	T.315.B
grading	S.1030.B - T.315.B
graduate students	S.1030.D
graphic organizers	S.1030.C
hierarchical modeling	W.315.B
high school	T.315.C
high school program	T.145.A
higher education	T.1220.B
hour load	T.315.A
implementation	T.145.A
information processing	S.1030.C
inservice teachers	F.5.B
institutional racism	F.9.F
instructional supervision	T.145.Fifth
instructional models	F.9.E
instructional preferences	F.325.C
interactions	F.2.D
interagency collaboration	F.2.A
journals	F.5.B
laboratory experiences	F.325.D
language arts instruction	F.9.E
large scale assessment	S.11.Lin
LASSI/SSNA	S.1030.C
latent trait models	T.315.D
learning disabilities	T.450.E
learning style	F.325.C
legal issues	F.845.D
linear modeling	W.315.B
literacy education	T.450.B
mathematics curriculum	T.145.A
mathematics applications	F.2.F
mathematics education	T.1050.C-T.315.C
measurement	F.845.D
measurement problems	T.1220.Lin
medical education	T.1220.D
meditation	T.1050.F
memory	T.450.C
mental models	F.5.F
mentoring	T.145.C
mild disabilities	T.450.E
modality preference	T.450.C
model fit	T.315.D
models	T.315.A
Monte Carlo simulation	F.2.D
mood	S.1030.Med
moral judgment	S.1030.Med
motivation	W.8.Max
multicultural infusion	S.1030.E
multicultural	T.145.F
multicultural education	T.1050.C - T.145.F - F.9.F
multicultural context	T.145.F
multidimensional scaling	T.1050.Med
multistate paradigm	T.1050.F
multivariate statistics	F.2.D
mysticism	T.1050.F - T.315.B
National University	F.325.E
needs assessment	W.1.C - F.5.B
networks	F.5.D
neural net	F.845.D
non-functional options	F.845.D
nonparemetric	F.2.D
nontraditional students	T.315.Med
one-room schoolhouse	F.9.B
open-air classroom	F.9.B
organizational change	T.1220.A
outcome-based education	T.450.B
parental training	T.1050.E
parental influence	T.1050.E - T.315.C - S.1120.B
parenting scale	F.5.D
parenting	T.1220.F
partial credit model	T.1050.Med
participating practices	T.1220.A
peer review	T.1220.B
peers' actions	F.5.Med
peers' attitudes	F.5.Med
Peirce	T.145.Fifth
perceived behaviors	F.5.Med
perceptions	T.1050.D
performance assessment	W.1.E - T.1050.Med
personality	F.5.E
perspectives	T.145.E
philosophy	T.1050.F
physical fitness	T.315.D
post secondary	T.145.B
postsecondary education	F.2.F
pre-service	T.315.Fifth
preparation programs	T.1050.A
preteachers' perspectives	T.145.F
principal	T.1050.A - T.1220.A
principalship	F.2.A
problem solving	F.2.F
problem-based learning	T.1220.D
professional preparation	S.1030.D
professional dev. schools	F.325.F
professional education	T.315.E
proficiency testing	T.1220.C - F.2.A

program	T.145.A
program requirements	F.2.F
psychology	T.1050.D
qualitative methods	W.1.D - T.450.D
qualitative research	T.315.B
quantitative requirements	F.2.F
Rasch model	T.1220.Lin - T.1220.D
Rasch measurement	T.315.F
reading	T.1050.B - T.450.C
reciprocal teaching	F.2.E
reflection	T.1050.A
reliability	T.145.Lin
religion	F.2.A
rural schoolteacher	F.9.B
scaffolding	F.820.C
scaling techniques	T.315.D
school achievement	T.315.C
school restructuring	T.315.A
school work	T.1050.E
school finance	T.1050.A
school supervision	T.145.Fifth
science	F.325.B
science education	T.450.C
science learning	T.450.C
secondary students	T.1220.C
secondary schools	T.1050.B
self concepts	F.5.Med
self-efficacy	T.450.A
self-regualted learning	W.8.Max
semiotic theory	F.5.F
sex differences	S.1030.Med
simulations	T.450.C
social interaction	F.820.C
social skill training	F.2.E
spaced practice	T.450.C
spatial ability	T.450.C
special education	T.145.C - F.2.E
special populations	F.2.C
staff development	T.315.A
standard setting	T.1220.D
standardized exams	T.450.F
statistics	W.1.F
stress management	T.315.E
structural equation modeling	T.1050.B - T.315.D - T.450.A
structure measurement	F.5.D
student misbehavior	T.1050.C
student teachers	T.1220.Med - T.145.Med F.5.B
student reflection	F.5.B
student retention	T.1220.A
students' actions	F.5.Med
students' attitudes	F.5.Med
study strategy	S.1030.C
studying	S.1030.C
substance abuse counselors	T.315.E
suggestopedia	F.325.C
suicide	T.315.E
superintendent	T.1050.A
supervision	W.12.A - T.1220.Med
survey revision	S.1030.A
systemic change	T.1220.A
systemic reform	F.325.A
task analysis	T.315.D
teacher change	T.1050.C
teacher education	W.12.A - T.145.Med - T.145.D - T.315.Med - T.315.Lin - T.450.Lin - F.325.F - F.5.B - S.1030.B
teacher employement	T.145.C
teacher finances	S.1030.B
teacher preparation	T.450.Lin - F.9.E
teacher recruitment	T.145.C
teacher reflection	F.9.E
teaching statistics	F.5.D
technology	F.9.E
technology education	S.1030.B
test anxiety	F.845.D
test-retest reliability	T.1050.Med
testing	F.845.D
text learning	S.1030.C
thinking math	T.1050.B
time constraints	T.145.A
training	T.1220.C
urban poor	F.9.B
urban classrooms	T.315.Med
validity	T.145.Lin - T.1050.Med
value	T.1050.Fifth
videotape	T.450.D
violence in education	F.325.E
Vygotskian psychology	F.820.C
wellness	T.315.E
whole language	F.5.A
Wisconsin outcomes	T.450.B
workforce education	T.450.A
writing	S.1030.C

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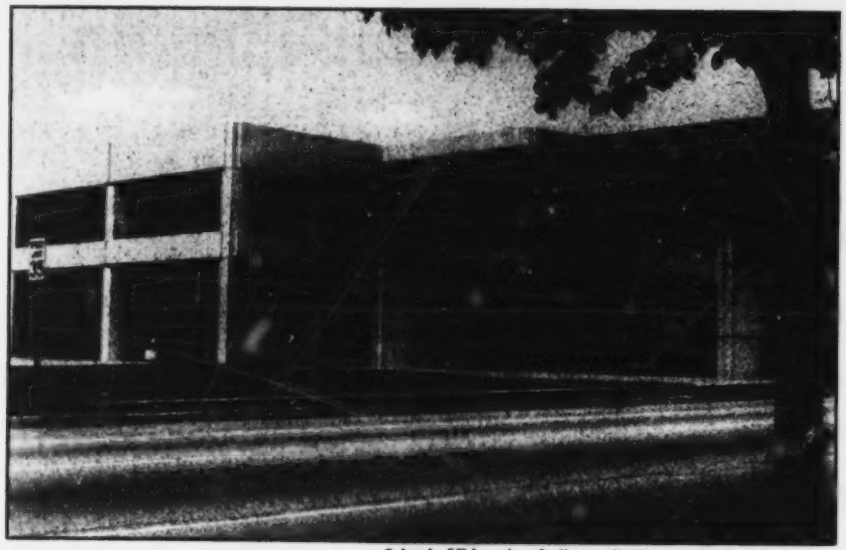

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In This Issue

This issue of MWER offers a variety of articles. Two articles study aspects of teaching. Manaf uses factor analysis to explore the latent dimensions of teaching behavior among preschool student teachers. Briscoe uses qualitative methods and a single case, an exemplary science teacher, to explore classroom assessment practices. Two articles consider methodological issues. McNeil and Newman explain the principles of meta-analysis for summarizing reviews of literature. Elliott and Barcikowski examine the power of F approximations for two multivariate statistical tests, Hotelling's trace and Pillai's trace. We are pleased to present this variety in the journal. We hope it reflects the variety of research interests among MWERA members. We also encourage authors to submit manuscripts from various perspectives. We work hard to find appropriate reviewers for each submission.

— Ayres G. D'Costa
— Susan M. Brookhart
— John R. Surber

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The Indiana University School of Education is located at two campuses: Bloomington and Indianapolis. Shown (top-left on front cover) is the state-of-the-art Wendell W. Wright Education Building in Bloomington, which contains the most advanced technological infra-structure available, featuring a world-class distance education studio/classroom, multimedia laboratories, computer classrooms, and other specialized educational settings. Shown (bottom-right) is the modern Education/Social Work Building located in the heart of Indianapolis.

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Investigation of Power Using F Approximations for the Hotelling-Lawley Trace and Pillai's Trace
Ronald S. Elliott and Robert S. Barcikowski, Ohio University
2

The Identification of a Model of Teaching Behaviors of Preschool Student Teachers
Zulkifli A. Manaf, University of Malaya
7

Making the Grade: Perspectives on a Teacher's Assessment Practices
Carol Briscoe, University of West Florida
14

Summarizing the Literature Review with Meta-analysis
Keith McNeil, New Mexico State University
Isadore Newman, University of Akron
26

Research Alive: All Our Children Learning
Jack Snowman, Southern Illinois University
30

Voices in Education
Edited by Marlene Schommer, Wichita State University
35

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Investigation of Power Using F Approximations for the Hotelling-Lawley Trace and Pillai's Trace

Ronald S. Elliott and Robert S. Barcikowski, Ohio University

Abstract

Differences among treatment groups in terms of which variable or linear combination of variables causes a significant multivariate analysis of variance (MANOVA) are often difficult to determine. This study is an attempt to develop a means by which a significant MANOVA can be followed by a discriminant analysis for the purpose of finding a significant contrast which can determine which variable or linear combination of variables is causing differences in which treatment groups.

Significance of the contrast was tested using Roy-Bose simultaneous confidence intervals. These intervals traditionally have been considered conservative as a hypothesis-testing procedure. Of concern in any hypothesis-testing procedure is type I error and power. This study investigated type I error and power of the procedure in numerous situations which used many combinations of number of groups, number of variables, nominal alpha, and group size. Included are situations which involved no violation of MANOVA assumptions, as well as situations involving a violation of normality or a violation of the assumption of a homogeneous covariance structure.

Results show that the proposed procedure needs great improvement when the assumptions of MANOVA are not met. When the assumptions are met, the procedure works fairly well in terms of power and type I error for a small number of groups or variables. As the number of groups or variables reaches six, the procedure begins to lose power, but type I error is acceptable.

Objectives

In the traditional use of multivariate analysis of variance (MANOVA), authors and researchers have used one of four possible multivariate statistics in testing the overall null hypothesis: Pillai's trace (V), the Hotelling-Lawley trace (T), Roy's largest root (R), or Wilks' lambda (λ). The ability of a test to reject the null hypothesis when it, in fact, is false, is called the *power* of the test. A rejection of the null hypothesis when it is true is an error and is called a type I error. Olson (1973, p. 111) recommended V to be "the most robust of the MANOVA tests, with adequate power to detect true differences in a variety of situations". Olson compared V with T, R, and W, among other multivariate statistics, in terms of power and type I error in a number of situations involving the violation of the assumptions upon which MANOVA is assumed to be a valid procedure.

Commonly used statistical packages such as SAS, SPSS, and SYSTAT use an F distribution to approximate the probabilities associated with the V, W, and T test statistics in using them for hypothesis testing. Elliott and Barcikowski (1993) found that when the subject-to-variable ratio was small in a one-way equal group size MANOVA, the F approximations provided by Pillai (1960) and used by most canned computer packages (e.g., SAS, SPSS, and SYSTAT) for V and T produced type I error rates which did not always meet Bradley's (1978, p. 146) stringent criterion for robustness. That is, under many conditions encountered by practitioners, V was found to be conservative and T was found to be liberal when compared to a nominal level of significance of .05.

Bradley's stringent criterion for robustness is that the actual level of significance be within $\pm .1\alpha$ of the nominal level of significance (α). For example, if $\alpha = .05$, then the approximation method should yield a nominal value that falls between .045 and .055. Such a level of precision would be necessary for an approximation method found in a statistical package which is meant to be used in a wide variety of research situations.

Elliott and Barcikowski (1993) considered type I error rates for situations involving 3 treatment levels with 2, 3, and 6 variables, and 6 treatment levels with 3 and 6 variables. This study extends the previous study by including type I error rates for the situation involving 6 treatments and 2 variables. However, the primary focus of this study is on the power of the F approximation methods for T and V when the assumptions of MANOVA are met.

Perspectives

Data sets were found where using SPSS program MANOVA (or SAS program GLM) a significant omnibus multivariate F was found based on T, but a nonsignificant result for this same statistic was found when using BMDP's 4V program. The difference between the two results was caused by the different approximation methods used by the programs to arrive at their probability values. Table 1 gives a situation comparing results from SPSS and BMDP. The same T statistic of 2.78697 was obtained by both packages doing a MANOVA on a data set. However, SPSS and BMDP produce a different significance associated with this same statistic because they use a different approximation method

used to produce the probability.

In the SPSS output, a probability of .044 is obtained while the output from BMDP shows a probability of .0654 associated with the same statistic. This led to a study (Elliott & Barcikowski, 1993) that used Bradley's (1978, p. 146) criterion for examining the type I error rates of the approximation methods under a variety of conditions.

An F approximation is not used for Roy's largest root and is based on Harris (1975) in BMDP and Pillai (1965) for SPSS and SAS; for T, BMDP's chi-square approximation is based on Tiku (1971) and SAS and SPSS F approximation is based on Pillai (1960); Wilks' lambda F approximation for all programs is based on Rao (1973); the F approximation for V is based on Pillai (1960) for SAS and SPSS.

Table 1

One-Way MANOVA

(6 Treatments, 6 Dependent Variables, 5 Subjects Per Treatment)

Output From SPSS

Multivariate Tests of Significance (S = 5, M = 0, n = 8 1/2)

Test Name	Value	Approx. F	Hyp. df	Error df	Sig. of F
Pillai	1.11157	1.09582	30.00	115.00	0.354
Hotelling	2.78697	1.61645	30.00	87.00	0.044*
Wilks	0.19299	1.32274	30.00	78.00	0.164
Roy	0.69570				

One-Way MANOVA

(6 Treatments, 6 Dependent Variables, 5 Subjects Per Treatment)

Output From BMDP4V

Statistic		F	df		Prob
LRATIO	= 0.192990	1.32	30.00	78.00	0.1638
TRACE	= 2.78697				
TZSQ	= 64.1004				
CHISQ	= 19.43		30.226		0.0654*
MXROOT	= 0.695699				0.0197

*Note. In the BMDP4V output, the chi-square probability is .0654 for the same Hotelling-Lawley (TRACE in BMDP) statistic for which SPSS reports a probability of .044.

Olson (1976) urged researchers to provide information concerning the approximation method used for reported statistics in their research reports when he indicated:

> *In view of the differing robustness performances of the test criteria, researchers who use the expression multivariate F should include a footnote specifying whose approximation to which criterion was employed. (p. 584)*

Methods/Data Source

A Monte Carlo study was undertaken based on a format developed by Olson (1973). A Fortran program (run on a Cray Y-MP Supercomputer) was written to generate discriminant score data to meet the conditions to be investigated. The program used the International Mathematical and Statistical Libraries (IMSL) random number generator, RNMVN, to generate random score vectors from a multivariate normal distribution. This particular generator produces scores from a normal(0,1) distribution. That is, the variables used in the study initially have a mean of zero and a variance of one. The investigation included all combinations of the following: 2, 3, 6 dependent variables; 3 and 6 treatment levels; and 4 (1) 20 sample sizes (equal n per treatment level).

Type I error

Type I error rates for Roy's largest root based on Harris (1975), T based on Tiku (1971) and Pillai (1960), Wilks' lambda based on Rao (1973), and V based on Pillai (1960) were estimated based on 100,000 random samples per situation for the two-variable and six-group situation to add to the previous study by Elliott and Barcikowski (1993). Robey and Barcikowski (1992) indicated that 100,000 samples are necessary to yield a power of more than 90% of detecting (α = .05) a departure of .1α from a nominal alpha of .05.

Power

Power was investigated for each of the above levels of variables and groups. Only one group size was used -- the group size where T and V were found to vary the most from Bradley's stringent criterion when considering type I error. Data sets were generated, and the mean vectors were altered to produce a certain noncentrality structure as defined by Olson (1973). Noncentrality refers to a difference in mean vectors among the groups. If the noncentrality is large enough, a significant MANOVA result is expected. In order to investigate power, the values of a certain variable or variables in certain groups were made larger to artificially produce a certain expected power in situations. This alteration of mean vectors produces an effect in what is known as the noncentrality parameter λ. This parameter is used as a measure of the distance between group means in the population.

Two different noncentrality structures were used. One is considered a *concentrated* structure (Olson, 1973) while the other is considered a *diffuse* structure. The concentrated structure was created by making the mean vector for group one (kc, kc, ...). kc is a certain constant computed by using k, the number of groups, and a constant c (see Appendix) defined by Olson (1973) to produce a certain value for the noncentrality parameter. The mean vectors for all other groups were kept at zero as generated by the random number generator. This means that the mean vector for group one differed significantly from the other groups on all variables involved.

The diffuse structure was produced by setting all elements of each group mean vector to zero, except the ith element of the ith group mean vector which is set to kc for all values of i from 1 to the min(p,k), where k is the number of groups and p is the number of variables measured on each group. Again c is a constant defined by Olson (1973) (see Appendix) to produce a certain value for the noncentrality parameter. This means that group one differed from other groups on variable one, group two differed from other groups on variable two, etc.

Figure 1. THREE VARIABLES, THREE GROUPS

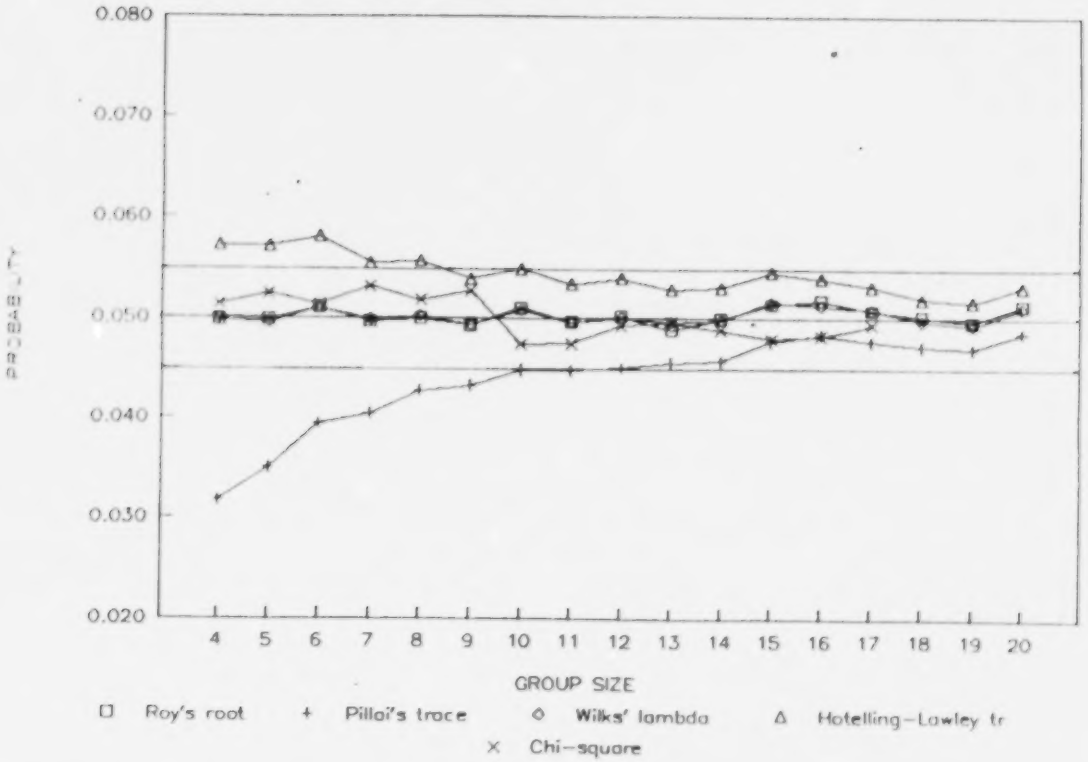
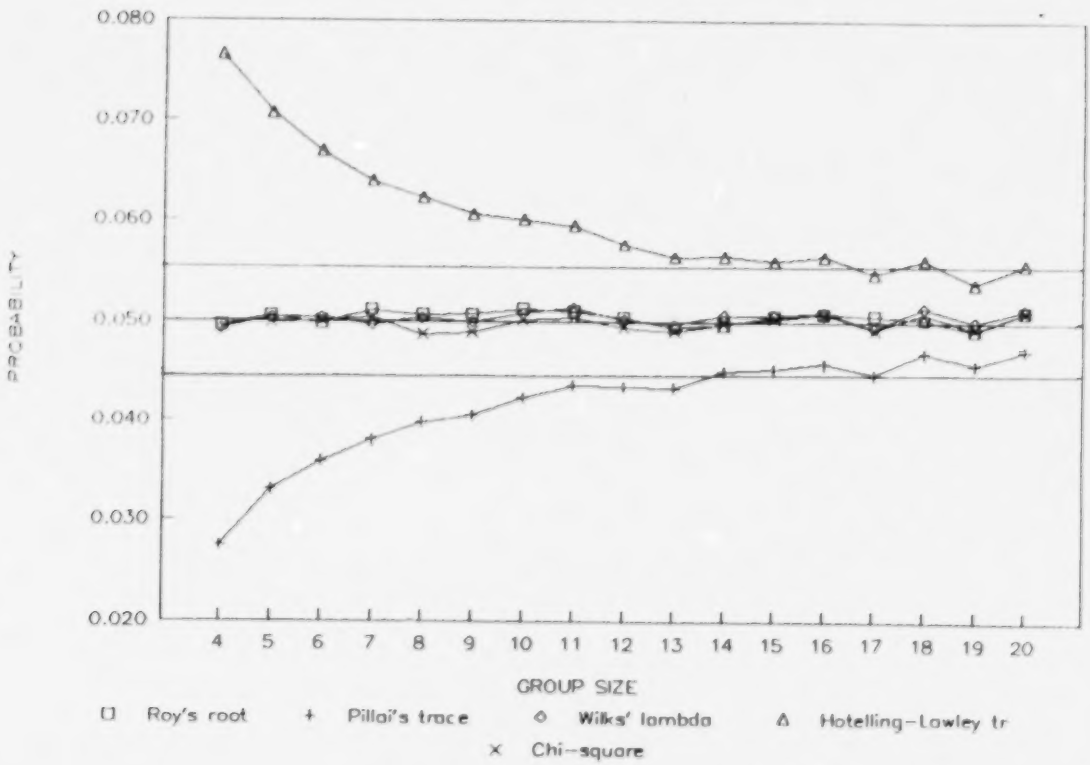


Figure 2. SIX VARIABLES, SIX GROUPS



For both noncentrality structures the constant, c, was computed to produce a noncentrality parameter large enough to give power levels of approximately .8 for T. Table 3, which shows the power values obtained, shows power for this statistic to range from approximately .7 to .9. If a larger noncentrality parameter were used in an attempt to get the power of V to .8 the power of T would reach 1. This ceiling effect would make the comparisons wanted impossible.

To investigate power, critical values for the situations involved could not be obtained from existing tables (Pillai, 1960; Timm, 1975). A method was needed to arrive at the necessary critical value for each of the above mentioned situations. In the investigation of type I error the canned software package, IMSL, was used to find the significance of a test statistic. Thus the actual critical value associated with an alpha of .05 was not known.

The method used involved arriving at a Monte Carlo critical value derived by generating 50,000 data sets where no difference on the mean vectors existed. For each of the 50,000 data sets, V and T were computed. For each of these statistics the minimum of all those statistics where a rejection of the null hypothesis occurred (that is, when a type I error occurred) was taken as the critical value associated with each situation. This critical value was then used to compute power for the two different noncentrality structures used. The power obtained using this Monte Carlo critical value was then compared to power obtained by using the F approximation.

Results

Type I error

In the two-variable, six-group situation the results were similar to those found by Elliott and Barcikowski (1993) for the other situations. The type I error rates for Roy's largest root and those based on the F approximations for Wilks' lambda as well as the chi-square approximation for T met Bradley's stringent criterion in all cases. However, the F approximations found for T and for V failed to meet Bradley's stringent criterion when the subject-variable ratio was at 5 to 1 or less. The effect on type I error rates caused concern for the power of these statistics computed using the F approximations when the assumptions of MANOVA were met.

In Figures 1 and 2 the actual levels of significance (labeled probability) and the treatment sample sizes (labeled group size) are plotted based on the F approximations for Roy's root, Pillai's trace, Wilks' lambda, the Hotelling-Lawley trace and Tiku's chi-square approximation for the Hotelling-Lawley trace. Graphs for only the three variables, three groups and six variables, six groups situations are shown. The other situations produced similar results. In these figures Bradley's stringent criterion for robustness is identified by lines at probability values of .045 and .055, and the nominal level of significance is identified by a line at .05. The F approximations for Roy's root, Wilks' lambda, and Tiku's chi-square approximation for T yielded estimates of the nominal levels of significance that fall between the lines at .045 and .055.

However, all six situations considered also contained treatment sample sizes where estimates of the nominal levels of significance provided by the F approximations of V are below .045 and the estimates of the nominal levels of significance for T are above .055, i.e., fail to meet Bradley's stringent criterion.

Table 2 gives the conditions and treatment sample sizes prior to the sample size where the estimates of the nominal levels of significance based on the F for T and for V meet Bradley's stringent criterion.

Table 2
Sample Size Prior to Estimate

		k (treatments)	
p (variables)		3	6
2	T	6	6
	V	10	6
3	T	8	9
	V	11	9
6	T	12	16
	V	11	13

For example, given two dependent variables and three treatment levels, the F approximation for the T yielded an estimate of the level of significance that fails to meet Bradley's criterion when the sample size is 6 or less (see Table 2), but would yield an estimate of significance that does meet Bradley's criterion when the sample size is 7 or larger. For the same conditions the F approximation for V yielded an estimate of the level of significance that fails to meet Bradley's criterion when the sample size is 10 or less (see Table 2), but would yield an estimate of significance that does meet Bradley's criterion when the sample size is 11 or larger.

Power

Table 3 summarizes the results of the study in terms of power. With the conservatism of V, its power was expected to suffer. The F approximation for the T previously produced an inflated type I error rate in situations where the subject-variable ratio was small. However, the power of V and T computed using the usual F approximation was very near that computed using a critical value found through Monte Carlo methods. The effect of the small subject to variable ratio on type I error did not affect power as shown by Table 3 (next page).

Conclusions

The results indicate that in multivariate analysis of variance studies (using MANOVA), with relatively small numbers of subjects of around 15 per treatment level or less, the current probability values reported by SAS (GLM) and SPSS (MANOVA) are conservative for the F approximations based on V and liberal for the F approximations based

Table 3
Comparison of Power Using Monte Carlo Critical Value and F Approximation

		Concentrated Noncentrality				Diffuse Noncentrality			
		F Approx.		Monte Carlo		*F* Approx.		Monte Carlo	
k	p	*T*	*V*	*T*	*V*	*T*	*V*	*T*	*V*
3	2	.9166	.7287	.9166	.7277	.9350	.9313	.9349	.9310
3	3	.8096	.4246	.8093	.4246	.8524	.8983	.8524	.8983
3	6	.7037	.3597	.7036	.3595	.7430	.8243	.7429	.8242
6	2	.9966	.9656	.9966	.9655	.9978	.9983	.9978	.9983
6	3	.9865	.7702	.9865	.7701	.9935	.9957	.9935	.9957
6	6	.9041	.3583	.9041	.3583	.9437	.9676	.9437	.9676

Note. *T* is the Hotelling-Lawley trace and *V* is Pillai's trace. *k* is the number of groups, *p* is the number of variables.

on *T*. The BMDP4V program does not report *V* and reports accurate probability values for *T* using a chi-square distribution rather than a *F*. All of these programs report accurate values for the *F* approximation based on Wilks' lambda and for probabilities associated with Roy's largest root (except SPSS which does not report a probability value for Roy's largest root). Unfortunately, many MANOVA studies with small subject-variable ratios exist in the social science literature (Olson, 1976). It would be unfortunate if the authors of these studies used *V* and found no significant result when one existed or used *T* and found a significant result when none existed. In the case of power, there seems to be no problem with the use of the *F* approximations.

It is important to emphasis that the results contained in this study apply to studies where the subject-to-variable ratio is small. In general, the authors agree with results reported by Olson (1973) that Pillai's trace is a robust statistic with suitable power for most situations applying MANOVA.

APPENDIX

To produce noncentrality for the investigation of power, the constant, *c*, was computed using the formulas below which came from Olson (1973). In the following definitions of *c* the following variables are used:

- λ - the noncentrality parameter
- *n* - group size
- *k* - number of groups
- *p* - number of dependent variables

For the *concentrated* structure, *c* is found by using:

$$c = \sqrt{\{\lambda/(p \cdot n \cdot k \cdot (k-1))\}}$$

For the *diffuse* structure *c* is found by using:

$$c = \sqrt{\{\lambda/((p-1) \cdot n \cdot k^2 + (k-p) \cdot n \cdot k)\}}$$

In both formulas the value for λ is found by a trial and error method which simply alters λ until the power desired is obtained in doing the computer simulations.

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616

The Identification of a Model of Teaching Behaviors of Preschool Student Teachers

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Abstract

Ratings from a previous study of nine teaching behaviors of 112 preschool student teachers were analyzed using exploratory factor analysis. These teaching behaviors were observed and recorded using the Observer Rating Scales. Preschool student teachers in the study exhibited these teaching behaviors in their teaching performance in a laboratory school setting. Four latent variables were found to underlie these nine teaching behaviors: facilitating, interpersonal, interactive, and flexibility. These latent variables were positively correlated with each other. A path diagram of the student teaching behavior model showing the relationships among the teaching behaviors and latent variables is presented.

Teaching behaviors have been studied by researchers for over three decades (Gage, 1963; Rosenshine, 1971; Rosenshine & Furst, 1971; Wright & Nuthall, 1970; Tobin, 1986; Ouzts, 1986; Brophy, 1987a; Brophy, 1987b; Joyce, 1988; Walberg, 1988; Porter & Brophy, 1988; Myers, 1990; Cangelosi, 1986). Manning (1990) reviewed five syntheses of research on teaching, highlighted findings relevant to middle-level teaching, and presented implications for teacher education. The topics discussed included preservice field experiences, adolescent student motivation, effective use of class time, effective teaching behaviors and student achievement. The research literature abounds in studies of teaching behaviors that make a difference in student achievement (Clark, Steele, Niemec & Walberg, 1992; Brophy & Good, 1986; Harris, Rosenthal & Snodgrass, 1986; Leder, 1987). Gage and Needels (1989) focused on the relation between teaching processes and student learning outcomes.

A sampling of the studies on teaching behaviors reviewed is presented in Table 1. The variables used in the instrument utilized in the current study reflect promising variables used in previous studies of teaching behaviors.

This study identifies a conceptual model to explain the relationship between observed teaching behaviors and latent variables that appear to govern them. The following nine variables were used to rate teaching behaviors:

Warmth -- the extent to which the teacher is relaxed, comfortable, and maintains positive interpersonal relationships with children.

Enthusiasm -- the interest level shown by the teacher and children during nursery school activities.

Clarity -- the clarity of instructions and expectations conveyed to the children.

Variety -- the extent to which the teacher uses a variety of materials and activities.

Individualization -- the degree to which the teacher provides children with different levels of work suited to their particular needs, interests, and abilities; and the amount of individual assistance provided.

Feedback -- the extent of information given to the children about the adequacy, acceptability, completeness, and correctness of their responses.

Table 1

Teaching behaviors studies reviewed

Researcher	Variables used
Rosenshine & Furst (1971)	Enthusiasm, Variability (Variety), Clarity, Businesslike Behaviors, (On-task), Warmth
Bush et al. (1977)	Teacher Clarity (Clarity)
Hines et al. (1985)	Teacher Clarity
Cruickshank &Kennedy (1986)	Teacher Clarity
Hamilton (1988)	Teacher Clarity
Clark et al. (1992)	Teacher Questioning Interaction, Feedback
Harris et al. (1986); Ouzts (1986); Brophy & Good (1974); Cooper (1979); Dunkin & Biddle (1974); Elijah (1980)	Teacher Expectation (Cognitive Demand)
Brigham et al. (1992)	Enthusiasm
Leder (1987)	Feedback (Teacher Interaction)
Marshall & Weinstein (1986)	Teacher Interaction
Brophy (1986b)	Teachers Managerial Behavior Teacher Instructional Behavior
Waxman & Walberg (1991)	Teaching Styles
McCutcheon et al. (1991)	Personality Variables Student Teaching Behaviors

Cognitive Demand--the level of intellectual activity that the teacher expects of the children.

Freedom--the degree to which the teacher provides classroom arrangements which facilitate independence and individual freedom for children.

On-Task Activity--the amount of child activity that is directed toward the accomplishment of instructional objectives (Briggs, 1982).

There is sufficient research evidence to suggest that teacher 'warmth' (Rosenshine & Furst, 1971), 'enthusiasm' (Rosenshine & Furst, 1971; Brigham, Scruggs & Mastropieri, 1992), 'variety' or 'variability' (Rosenshine & Furst, 1971), and 'clarity' (Bush, Kennedy & Cruickshank, 1977; Hines, Cruickshank & Kennedy, 1985; Cruickshank, 1985; Cruickshank & Kennedy, 1986; Hamilton, 1988) promote student achievement. Other researchers (Brown & McIntyre, 1993; Stones, 1992) have identified other variables that are similar in content to those used in this study.

The variable 'cognitive demand' used in this study is related to teacher expectations. Having appropriate expectations is an important teaching behavior to learn (Harris et al., 1986). Ouzts (1986) pointed out that the effects of teacher expectations on student achievement can be both positive and negative. Teacher expectations can become self-fulfilling prophecies over time (Brophy & Good, 1986; Cooper, 1979; Dunkin & Biddle, 1974). Elijah (1980) stated that teacher expectation is an influential factor in determining how much is learned in the primary school classroom.

Teacher enthusiasm and its effect on student achievement has been studied by Rosenshine and Furst (1971) and Brigham, Scruggs and Mastropieri (1992). Csikszentmihalyi and McCormick (1986) stress the influence of teachers in shaping the behavior patterns of youth. Enthusiastic and dedicated teachers are able to transform the classroom into a place where good values, habits and patterns of behavior are passed on to the future generation.

'Feedback' is related to teacher interaction with students. Leder (1987) examined the differences in the interaction patterns between teachers with high and low achieving students. It was found that teachers tend to interact most frequently with high achieving and high expectancy students, particularly at grade six level. However, they consistently spent more time waiting to interact with low achieving and low expectancy students. In another study, Marshall and Weinstein (1986) found positive teacher-student interactions in low-differential treatment classrooms compared with high-differential treatment classrooms for grade five. Interestingly, they found the opposite pattern for grade seven.

Another teacher behavior that has been extensively researched is teacher clarity. It has been found that clear teachers affect student achievement positively (Bush, Kennedy, & Cruickshank, 1977; Hines, Cruickshank & Kennedy, 1985; Cruickshank & Kennedy, 1986). However, a recent study conducted by Hamilton (1988) did not support this finding.

There are numerous reasons for identifying and measuring teaching behavior variables. These variables are relevant in teacher education research, for feedback on teaching effectiveness, and in teacher employment decisions (Tobin, 1986).

Teaching behaviors impact student achievement. Brophy (1987b) presents an excellent review of teacher effects research and teacher quality. He indicated that teachers' managerial and instructional behaviors were instrumental in bringing about student achievement gains. Waxman (1988) cites research to identify effective lesson introduction and pre-instructional activities (commonly known as set induction) and their effects on student achievement. Teachers who present "advance organizers" in the class help students to focus their attention and thus increase retention and learning.

In a more recent review, Waxman and Walberg (1991) point out that among effective teaching behaviors are teaching styles which are individualistic. It is therefore difficult to specify a set of ideal teaching behaviors. Beginning teachers can be taught many different approaches to effective teaching, but it must be noted that these approaches can interact with a teacher's personality and natural ability. Teaching style is a composite of personality and philosophy, evidenced by the teacher's behavior and attitude, what the teacher emphasizes, and how he or she reacts to different situations. The relationship between teacher personality variables and student teaching behavior has also been studied by McCutcheon and his colleagues (1991). According to Waxman and Walberg (1991), teaching style involves choosing among teaching alternatives, and the choices teachers make denote their perceived images and roles. Through their style, teachers integrate the theories they believe in with the practices they adopt in the classroom. Just like life styles, teaching styles can make a difference in teaching behaviors, and between success and failure in the classroom.

Brown and McIntyre (1993) present an extensive perspective on good teaching from the students' and teachers' points of view. The perceptions of students and teachers regarding good teaching behaviors are complementary and relate in content to the variables proposed in the current investigation. Students perceive good teaching to include: 1) creating a relaxed and enjoyable atmosphere in the classroom, i.e., 'warmth'; 2) retaining control in the classroom, i.e., 'on-task activity'; 3) presenting tasks in ways that interest and motivate pupils, i.e., 'variety'; 4) providing for pupil understanding or helping with difficulties, i.e., 'individualization'; 5) making clear what pupils are to do and achieve, i.e., 'clarity'; 6) judging expectations, i.e., 'cognitive demand'; 7) encouraging pupils to raise their expectations of themselves, i.e., 'cognitive demand'; (8) developing personal, mature relationships with pupils, i.e., 'warmth'; and (9) utilizing personal talents, including 'enthusiasm' for the subject matter or related areas.

This study develops a basic conceptual model of teaching behaviors using the path analysis conventions presented in Joreskog and Sorbom (1989). Experimental studies and synthesis of research on teaching during recent years have provided specific and descriptive information on effective teaching behaviors and models of teaching (Manning, 1990; Joyce, 1988; Joyce, Weil & Showers, 1992; Brophy, 1987b; Walberg, 1988; Porter & Brophy, 1988; Brophy & Good, 1986).

The research questions for this investigation are:

1. How many latent variables govern the relationships among the nine measures of teaching behaviors?
2. Are these latent variables correlated with each other?
3. How are the nine teaching behaviors associated with each other when subjected to exploratory factor analysis?
4. Are these teaching behaviors good indicators of the latent variables?

Method and Results

This study utilized data from a study concerning the teaching behaviors of preschool teachers by Briggs and Dickerscheid (1985). Ratings (6-point scale) of teaching behaviors of preschool student teachers using the Observer Rating Scales (McDaniel, Lohmann, & Little, 1974) were conducted concurrently at two higher education institutions located in the Midwest.

One hundred and twelve student teachers were observed for approximately 30 minutes. Their teaching behaviors were rated by trained observers in classroom settings. All the observations occurred during "free play" situations in which several classroom activities were occurring simultaneously and children were moving freely from one activity to another according to their interests.

These observations were done in the respective laboratory school located within each institution. The Observer Rating Scales (ORS) have a "relatively high degree of construct validity" and the inter-rater reliability was estimated to be .83 (Briggs & Dickerscheid, 1985, p. 59).

An exploratory factor analysis technique was used to analyze the correlation matrix based on the ratings of 112 student teachers on the nine teaching behaviors. The upper triangular matrix without the diagonal is presented in Table 2.

Table 2
Correlation Matrix of the Nine Measured Variables
(N=112)

Variable	2	3	4	5	6	7	8	9
1 Warmth	.72*	.53*	.33*	.45*	.39*	.26*	.40*	.42*
2 Enthusiasm		.59*	.41*	.41*	.50*	.28*	.30*	.39*
3 Clarity			.55*	.66*	.55*	.51*	.37*	.48*
4 Variety				.49*	.36*	.37*	.51*	.45*
5 Individualization					.26*	.42*	.33*	.39*
6 Feedback						.11	.20	.39*
7 Cognitive demand							.40*	.20
8 Freedom								.30*
9 On-task activity								

*p < .001

The unweighted least squares (ULS) method of factor extraction was employed because of the occurrence of Heywood cases in the data. Heywood cases are referred to instances where some communality values in the correlation matrix are greater than one. Four factors were retained, based on the scree plot of eigenvalues. These first four eigenvalues appear to be the only ones significant enough to be retained. The fifth and subsequent eigenvalues are too small to be of importance. The Scree plot is presented in Figure 1 (next page).

The four factors were obliquely rotated to achieve simple structure and enhance interpretation. The rotated factor pattern (F* Matrix) is presented in Table 3. Note the teaching behaviors (correlations shown in bold type) associated with each factor or latent variable.

Table 3
Obliquely Rotated (Promax) Factor Matrix (F*) from ULS Solution

Rating Scale	Factor1 (Interactive)	Factor2 (Facilitating)	Factor3 (Interpersonal)	Factor4 (Flexible)
Feedback	**0.8806**	-0.2471	0.0164	0.0119
On-task activity	**0.4156**	-0.0377	0.0775	0.2522
Clarity	0.4092	**0.7948**	-0.0743	-0.0154
Cognitive demand	0.3851	**0.7858**	0.0076	0.1761
Individualization	0.0032	**0.5768**	0.0711	0.1212
Warmth	-0.0109	0.0056	**1.0000**	-0.0044
Enthusiasm	0.3803	0.0204	**0.4770**	0.0034
Variety	0.2921	0.0505	-0.1679	**0.7184**
Freedom	-0.1799	0.1883	0.1565	**0.5508**

Note: Numbers in bold type indicate significant correlations

Table 4 shows that the latent variables are correlated with each other, with correlations varying from .43 to .72. This implies that persons who are high on Factor 1 are also likely to be high on the other three factors.

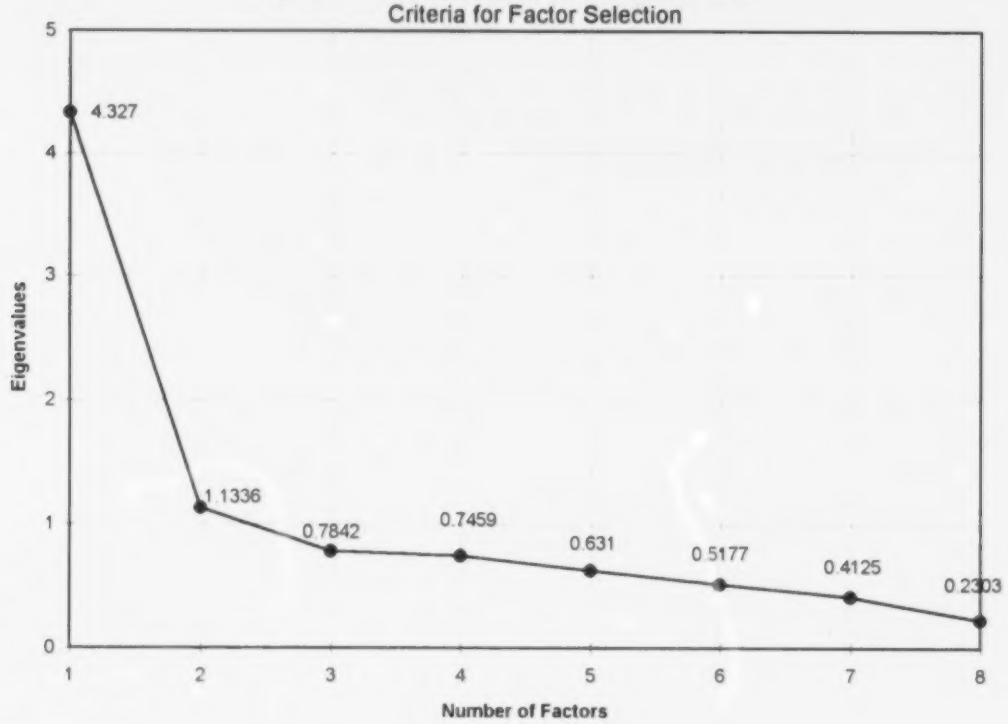
Table 4
Phi Matrix - Inter-Factor Correlations

	Factor1	Factor2	Factor3	Factor4
Factor1	1.0000			
Factor2	0.7224	1.0000		
Factor3	0.5892	0.5382	1.0000	
Factor4	0.4787	0.5841	0.4319	1.0000

Factor1= Interactive Behavior
Factor2= Facilitating Behavior
Factor3= Inter-Personal Behavior
Factor4= Flexible Behavior

Figure 1. SCREE PLOT OF EIGENVALUES

Criteria for Factor Selection



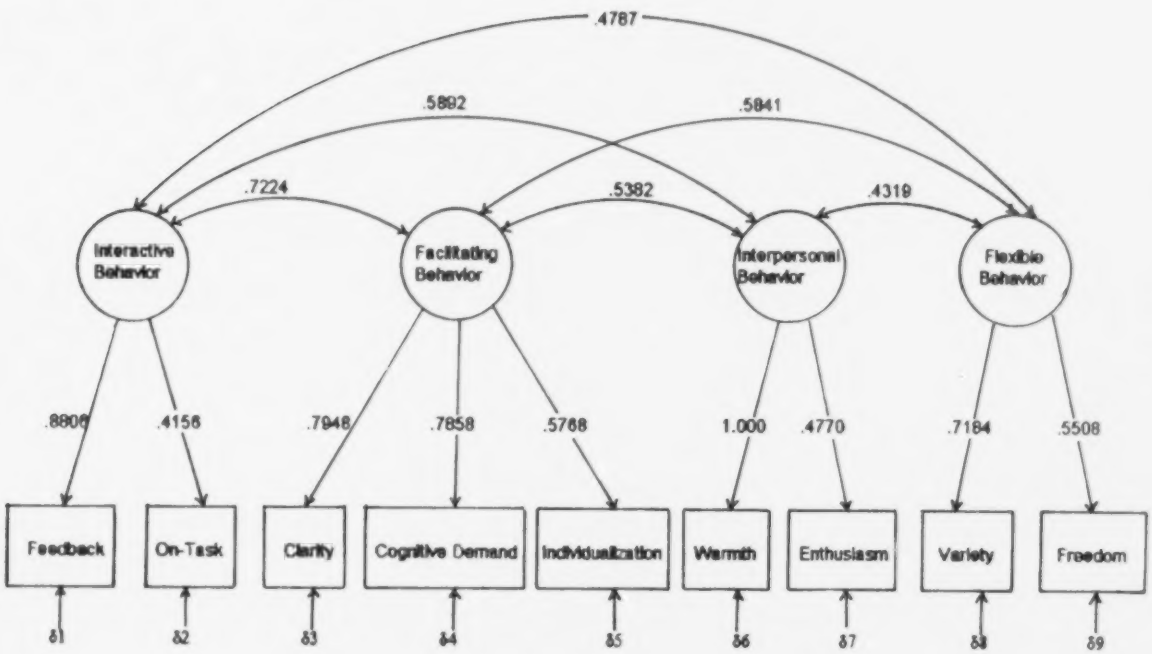


Figure 2.
A Path Diagram of the Model of Teaching behavior

Discussion and Interpretation

The nine teaching behaviors used in this investigation (feedback, on-task activity, clarity, cognitive demand, individualization, warmth, enthusiasm, variety and freedom) are similar in nature to those used in other studies of teaching behaviors (Rosenshine & Furst, 1971; Harris et al.,1986; Leder, 1987; Brigham et al., 1992; Bush, Kennedy & Cruickshank, 1977; Cruickshank, 1985; Cruickshank & Kennedy, 1986; Hines, Cruickshank & Kennedy, 1985; Ouzts, 1986; Leder, 1987; McCutcheon et al., 1991; Brown & McIntyre, 1993) even though only some or only subsets of the variables were used in each of these studies. At times, these variables are referred to by different names in other studies. For example, 'on- task activity' is referred to as 'business-like behavior', and 'variety' is called 'variability' (Rosenshine & Furst, 1971).

The four latent factors identified by this study underlie the nine measures of teaching behaviors. The latent factors, labeled 'facilitating', 'interactive', 'flexible', and 'interpersonal', are sometimes referred to as constructs in psychological measurement. They represent the cluster of measured teaching behaviors that loaded on them. The four latent factors identify the important components of the model of teaching behaviors among preschool student teachers. The nine measured teaching behaviors represent significant measures of the basic model. Their importance is reflected by their high loadings that vary from 0.41 to 1.00 on the respective latent factors.

Using the conventions developed by Joreskog and Sorbom (1989), the teaching behaviors are measured variables (MVs) which are represented by rectangular or square boxes, while the factors are latent variables (LVs) represented by circles. Error variances are shown in the diagram but they are not enclosed. The influence of LVs on MVs is represented by straight one-way arrows from the LVs to the respective MVs. The number on each arrow is the Lambda (λ) value representing this influence. Inter-factor correlations are denoted by curved two-way arrows between the factors, and their value is usually denoted by Phi (ϕ). Error variances, denoted by delta (d), are shown in the model diagram with arrows pointing toward the respective MVs. The model of teaching behaviors of preschool student teachers developed by this study is presented in Figure 2.

Four latent dimensions were identified and given labels based upon the common features of the teaching behaviors that loaded highly on them. These latent dimensions of teaching behaviors are described as follows:

- *'Interactive behavior'* -- as measured by Feedback (0.88) and On-task activity (0.42).
- *'Facilitating behavior'* -- as measured by Clarity (0.79), Cognitive demand (0.79), and Individualization (0.58).
- *'Interpersonal behavior'* -- as measured by Warmth (1.00) and Enthusiasm (0.48).
- *'Flexible behavior'* -- as measured by Variety (0.72) and Freedom (0.55).

These four latent dimensions accounted for 78 percent of the common variance shared by the nine measures. The latent dimensions are also intercorrelated, illustrating the complexity of teaching behavior. The nine measures of teaching behaviors were all found to be important elements of this four-factor model. This model provides a new approach to explaining the complex relationships among the teaching behaviors. It should help generate new hypotheses and research.

The four latent variables identified in this study are similar in meaning to 'teaching style' and 'teacher personality' mentioned earlier (Waxman & Walberg, 1991). 'Interpersonal behavior', as measured by 'warmth' and 'enthusiasm', is related to teacher personality. It is something inherent and personal to the teacher. It is what the teacher brings into the classroom, namely, the teacher "presage" variables referred to in an earlier model of research in classroom teaching (Dunkin & Biddle, 1974). 'Interactive behavior', 'facilitating behavior' and 'flexible behavior' denote teaching behaviors that constitute 'teaching style' or what teachers exhibit during the "process" of teaching. Teaching style varies from teacher to teacher. As presented in Butler (1984), teaching styles can be categorized as concrete random, concrete sequential, abstract random, and abstract sequential. However, most teachers do not exhibit 'pure' teaching style. They tend to incorporate features from other categories, which contributes to the complexity of teaching behaviors.

One may conclude that preschool student teachers exhibit four major categories of teaching behaviors in classroom performance. Their teaching behaviors were demonstrated in various ways and in varying amounts, but these variations might be explained by the four latent factors identified in this study.

Since the latent variables are correlated with each other, one cannot partition the variance of their performance in terms of the latent variables identified in this investigation. In other words, persons who manifest the characteristic governed by one factor tend to also possess characteristics that are attributed to the other three factors. Specifically, in this study, student teachers who exhibit a high degree of 'facilitating' behavior also tend to be highly endowed in 'interpersonal', 'interactive', and 'flexible' behaviors.

Given that each factor is related to a unique set of teaching behaviors (See Table 3), a teacher rated high on a certain behavior is also likely to be rated high on related behaviors within the factor. Thus, teachers rated high on Feedback are likely to be rated high on 'On-task activity'. The teaching behaviors associated with each factor appear to be logically related. Most of them appear to be good indicators of the latent factor or construct. High loading values in the upper .40s and above are indicative of this quality. This is also shown by their final communality values (h^2), which vary from .36 to 1.00 with a median value of .60.

Limitations and Recommendations

This model needs to be confirmed with another data set. Factor stability is a major concern in factor analytic studies. When confirmed, this model would provide a theoretical framework for future research on teacher behaviors.

Since the sample used in the study came from a population of preschool student teachers from two institutions of higher learning located in the midwest, these findings cannot at this time be generalized beyond this population.

Future studies should employ confirmatory factor analysis using new data. Confirmatory factor analysis could be done to yield measures of goodness of fit of the hypothesized model to the data. If this model is plausible, then a parsimonious diagram could be drawn to represent the relationships among the variables in the population. Thus, this model could provide a theoretical framework for future research, especially for validation studies of measures of teaching behaviors.

Other research questions that need to be addressed in future studies should include the following:

1. Do preschool teachers who possess these teaching behaviors contribute to significant learning among pre-schoolers?
2. Are these teaching behaviors exhibited by preschool teachers in other cultures? (Cross-cultural validation studies)?
3. How different are the teaching behaviors of teachers in different grade levels (Elementary vs. Secondary)?
4. Are teaching behaviors the same among teachers of different subject areas?

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ERRATUM

In Volume 7, Number 2 (Spring, 1994), a formula was misprinted in Benjamin D. Wright's article, "Composition Analysis," on page 29. In the abstract and in the second column of text, the formula G(x+y) = G(y) should read G(x+y) = G(x) + G(y).
We apologize for the error.

Making the Grade: Perspectives on a Teacher's Assessment Practices

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Abstract

This study analyzes one teacher's attempts at innovative assessment practices, and the struggle to implement a meaningful science curriculum in the face of traditional assessment expectations. The interpretations presented focus on three dilemmas influencing teaching practice: maintaining individual student accountability when cooperative group learning is prescribed by the curriculum, evaluating lower-ability students on fixed standards while maintaining a low failure rate, and providing summative grades with limited data on student knowledge. The study highlights the need to provide support for teachers attempting innovative change in teaching practive, and especially, for restructuring current beliefs about the purposes of assessment and grading.

Science educators have long recognized the important role that assessment plays in driving the implementation of curriculum in individual classrooms (Tucker, 1991, Kulm & Stuessy, 1991). Teachers, held accountable for what students learn, tend toward planning and implementing a curriculum in accord with external tests (Tobin &Gallagher, 1987).

Although a goal of science teaching is that students learn science concepts in a meaningful way and apply them to solving real problems, teachers' assessment practices, perceived as consistent with external assessments, are often counterproductive to this goal (Haertel, 1991; Lovitts & Champagne, 1990). Traditional testing procedures (i. e., multiple choice, matching, fill in the blank) which emphasize facts and algorithms rather than higher level thinking or problem-solving encourage students to seek facts and rules to memorize rather than to engage in learning with understanding. Getting the highest grade on the test supplants meaningful learning as a goal (Briscoe & Ulerick-LaMaster, 1991).

How teachers perceive assessment interacting with other components of the curriculum influences whether classroom assessment becomes a tool which encourages students to learn meaningfully or produces less desirable outcomes. Teachers do what makes sense within a given context (Tobin, Kahle, & Fraser, 1990). Beliefs and images constructed as a result of experiences (Clandinin, 1986; Gallagher, 1989; Tobin, 1991; Tobin and Gallagher, 1987) as well as beliefs associated with personal epistemologies (Briscoe, Lorsbach, Tobin & Lamaster, 1990) influence how teachers view their roles as assessors and the place of assessment in the curriculum. Additionally, beliefs affecting assessment practices may be grounded in perceived customs and taboos related to the school culture (Britzman, 1986, 1989). Implementing assessment practices to be consistent with teaching science for meaningful learning may, not only, require teachers to learn how to assess students in ways alternative to those exemplified by external testing programs, but to reconstruct the cognitive frameworks by which they make sense of assessment and their roles as assessors as well.

Theoretical Framework

The knowledge teachers use to make sense of their practices is constructed from their experiences. As teachers implement various classroom practices, the knowledge they have about teaching and learning is tested, and the meanings of various practices are negotiated through the interactions of the teacher and others in the school community (von Glasersfeld, 1989). Knowledge frameworks supported by practices which are observed to work, make sense and are maintained, while those which suggest practices which do not work in the classroom and culture are either modified or rejected. Each day, new experiences are interpreted in light of the set of referents already constructed and knowledge about teaching and learning is reconstructed

There are also aspects of teachers' knowledge which are socially negotiated and represent how schooling is interpreted and understood by parents, students, school administrators and other members of the school culture (Feiman-Nemser & Floden, 1986). As teachers make sense of their assessment practices, these culturally shared, normative knowledge constructions serve as referents to which they refer other beliefs and their actions.

Explicating the nature of referents teachers use to make sense of their assessment practices is a step toward developing an understanding of how they perceive their roles as assessors and how those perceptions impact on curriculum. Accordingly, this study, was designed to identify cognitive constructs that one teacher used to make sense of assessment. The study provides an in depth look at the complexity of one teacher's thinking about classroom assessment processes as he struggled to implement changes in his practices.

Purpose

The purpose of this study was to investigate the assessment practices of one high school teacher and the forces which influenced what was assessed and the way assessment was implemented. The extent to which the teacher changed his assessment practices in conjunction with changes in other classroom practices is described. The in-

terpretations presented here focus on three dilemmas identified by the teacher as influencing his practices.

- Implementing a curriculum in which cooperative group activity was fundamental to learning, yet maintaining individual accountability for each students' participation and performance.
- Evaluating lower ability chemistry students on the basis of fixed performance standards, yet maintaining a low failure rate.
- Evaluating student performance and assigning summative grades, yet having limited data upon which to make a judgment of the extent of students' knowledge.

Method

The teacher, Brad, is a member of the faculty of Southern High, a public high school in an urban area. The school draws approximately 60% of its student body from low socio-economic urban minority neighborhoods. Brad is the chemistry teacher, one of ten teachers in the science department which he chairs. Brad began his teaching career at Southern High shortly after earning a masters degree in science education. He has taught there for 16 years and is highly regarded by his peers and administrators. He received recognition from the school system four years prior to the initiation of this study when was honored as teacher of the year. When Brad was consulted about participating in the project, he readily agreed, viewing the proposed research as an opportunity to examine the relationship between the way he was teaching and what his students were learning.

Data collection took place over the course of a school year. Transcripts from biweekly meetings with Brad and field notes from weekly classroom observations served as primary data sources. Discussions during the meetings were informal and open-ended providing Brad an opportunity to express his thoughts and concerns in a number of areas relating to his experiences. Frequent topics were what was happening in the classroom, why Brad chose certain lessons and assessments, what worked and what did not work. We also discussed theoretical issues relating to epistemology, particularly the implications of positivism and constructivism for teaching practices and assessment. As the study progressed, transcripts served as foci for reflection and Brad added his comments upon reading them. Additional sources of data included copies of formal assessments and students' responses to questions as well as Brad's evaluations of them.

Data were analyzed on a continuous basis throughout the study. Research questions generated from review of the data sources served as a basis for discussions with Brad as the study progressed. As patterns representing Brad's thoughts and actions were constructed from the data, assertions were generated (Erickson, 1986). All assertions and the supporting and refuting data were discussed with Brad. Attempts were made to refute the assertions and to explain all data that did not support assertions. Through this iterative process assertions were generated that represent what Brad and the researcher agree best encompass the data and are credible explanations of Brad's assessment beliefs and practices.

Interpretations

At the beginning of the school year Brad was committed to implementing two major changes in his practices. First, because he believed that science learning might best occur if he provided students with opportunities to work through problems themselves interacting with one another in small groups, he decided to emphasize cooperative learning activities in his classes. Brad wanted to increase student involvement in laboratory activities and assist them to understand science as a process of consensus building.

Brad's second major change was focused on assessment. Historically, multiple choice tests had been the mainstay of his evaluation procedures. However, as he reflected on his own learning he began to make sense of an idea that students' understandings of science knowledge and the manner in which they applied it in new contexts might vary from student to student. He wanted to develop assessment activities which would take into account the varied nature of understandings students might construct as an outcome of problem-centered science activities. He decided to use alternative assessment tasks which included both open-ended problem-solving questions and closed questions and permitted students to use their notes from group investigations as resources while taking the tests. Tests were marked on the basis of whether students were able to demonstrate use of these resources in reasoning about new situations as well as recall information presented in class.

For Brad, making the commitment to change his practices was not difficult. He perceived that implementing a traditional chemistry curriculum and using multiple-choice examinations to evaluate students had not resulted in meaningful learning for his students. The failure rate on his tests had always been high and few students seemed to remember chemistry concepts from one day to the next.

On the basis of his experiences as a teacher at Southern High, Brad constructed assessment as having several functions within his implemented curriculum; however, a major concern for him was integrating various assessment activities into a systematic process he could use to determine students' grades. Brad's assessment beliefs centered around two interactive areas of practice: a) day-to-day assessment that he believed served to motivate students to engage in learning activities and demonstrate accountability for their work and learning; and b) formal assessment that measured academic performance. Interpretations of the meanings Brad had constructed for each of these areas and how he constructed their relationship to the grading process follows.

Assertion I: Implementation of a daily assessment routine which rewarded motivation and task completion undermined Brad's attempt to successfully implement cooperative learning in his classroom.

Early in the study Brad noted that students in his classes rarely demonstrated a desire to learn chemistry. He

explained that students tended to enroll in chemistry because it was a college preparatory course; however, his observations of their work and attitudes tended to indicate to him that they were not motivated to succeed academically. As he described it:

(12/15/89) If you ask everybody in my class you might find a couple in each class that say they weren't sure about going to college. Most of them say they plan to, but in terms of doing the things that they really would need to do to go to college, it's not there for a lot of them. . . . I mean, I honestly believe about 75% of these kids would be perfectly happy if they came in class every day and just sat around and talked and left. Just did that every day - had kind of a free period.

Development of a daily assessment routine that held students accountable for class participation through a grading process was Brad's approach to solving the problem. Making a passing grade was important to these students; however, they were not motivated to participate in learning activities unless grade rewards were associated with them. As Brad noted:

(5/15/90) One of the first questions they'll often ask is, "do I get credit for it? If not, then I don't want to do it." That's been my experience anyway.

Accordingly, the meanings for assessment that Brad had constructed were connected with how he made sense of his role in motivating students. He operationalized his understanding of assessment in this context by asking students to complete written assignments as part of each class activity. Students were then assigned a mark for their products at the end of class. These marks served as a record of each students' accountability for completing the tasks. As Brad described his thinking:

(9/11/89) I do want to make them accountable for doing the things that I ask them to do because there is a tendency for some of them sometimes to just sit back and let things slide and this way I have some accountability.

Brad's emphasis on accountability for work completion as part of his assessment plan is representative of a view of schooling that Marshall (1988, 1990) has termed, school-as-workplace. Consistent with this metaphor the school is depicted as a factory-type workplace where productivity is the primary goal and grades are payment for work well done. Within the work setting, students/workers are supervised by teachers/managers who have the responsibility to hold each individual accountable for task completion. As Brad reflected on the difficulty he experienced in revising his assessment practices, he also referred to the workplace metaphor:

(7/4/89) It's the history of my education. What I'm comfortable with - which has all been school is work. We give you this, you give us this back . . . I've always kind of fallen back on the work mode as what I do.

Generally, when classroom settings are perceived as workplace-like settings, emphasis is not necessarily placed on learning. Yet, for Brad, students' participation in activities and completion of tasks was more than a means to maintain accountability and ensure on-task orientation in the classroom. He believed that students doing the work was integrally related to students' learning as is exemplified in his statement:

(6/22/89) If they work on the problems and go through the process of figuring the stuff out, having to do it themselves they would learn better.
(9/7/89) I hope that by working on it they'll learn something from it, as opposed to not doing it and not getting anything from it.

Brad also considered providing feedback to students an important contributor to their learning from the work they did. Therefore, he reviewed each paper and made comments or put question marks next to statements which he viewed as representing insufficient or questionable knowledge claims. However, Brad was frustrated by the fact that students seemed interested primarily in obtaining credit for the work, rather than learning from his feedback. He stated:

(9/11/89) I wasn't satisfied with what the people in groups did with them when they got them back. One or two would work on it and the others didn't.
5/2/90) It's frustrating. I want them to approach it as a learning experience, but they're so conditioned to just getting stuff done to get a grade.

As the weeks progressed and the quantity of paper work increased, Brad decided to provide feedback to students on a single product from the group; however, he continued to collect and keep records of individual papers completed by each group member. Although Brad was always overwhelmed by his perceived responsibility to check each student's work on a daily basis, it made sense to him to do so in order to hold each student accountable for classwork and presumed learning.

A second area of concern for Brad as he worked with students whom he perceived as unmotivated or unable to achieve academically was that most of the students in his classes did not show substantial achievement on formal chemistry assessments. He perceived his implementation of a daily assessment routine as much a solution to this dilemma, as it was to dilemmas associated with accountability.

Brad believed that a function of schools was to help people to succeed, to achieve their goals. He perceived one way to help students do that was to provide contingencies for them that would allow success without their having to demonstrate specific academic achievement. Brad believed that for students who were academically unmotivated, providing a reward for effort was important. He described how he made sense of daily assessment as a means to assist these students the following way:

(5/15/90) There are two areas [of assessment] one is to figure out what they know about the stuff we've been working on. And secondly, some element of measuring how much effort they put into it. How hard they work . . . . I do it more because of what I think is fair to kids . . . . If I did [assess

(Continued on page 21)

MWERA Annual Meeting has Something for Everyone

From training workshops and invited speakers, to symposia and paper presentations, MWERA is offering a complete program with the best that educational research has to offer at this year's annual meeting to be held in the Bismarck Hotel, Chicago, on October 12-15, 1994.

Invited Speakers to Address MWERA '94

The following are some of the leaders in education that will be making presentations individually or as members of panels:

***Kenneth Addison*, Northeastern Illinois University**
***Lyn Corno*, Teachers College, Columbia University**
***Donald Cunningham*, Indiana University**
***Gene Glass*, Arizona State University**
***Sandra Hollingsworth*, Michigan State University**
***Anita Woolfolk-Hoy*, Ohio State University**
***Thomas Lasley*, University of Dayton**
***Joel Levin*, University of Wisconsin-Madison**
***Paul Pintrich*, University of Michigan**
***Richard Pugh*, Indiana University**
***Dale Schunk*, Purdue University**
***Barbara Shade*, University of Wisconsin-Parkside**
***Robert Slavin*, Johns Hopkins University**
(*co-sponsored by Allyn & Bacon*)

Training Workshops Offered

You will not only be learning *what's new*, but also *how*. Economical workshops offered by experts will be available on the following topics:

Creating Learning Opportunities in Supervision
Focus Group Interviews as a Needs Assessment Tool
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Many-Facet Rasch Measurement
An Introduction to Correspondence Analysis
Authentic Assessment in the Preparation of Educators
An Introduction to Hierarchical Linear Modeling
Getting and Keeping an Academic Position

Teacher Workshops on Multicultural Education Offered

Eugene Garcia is Director of the Office of Bilingual Education and Minority Languages Affairs of the U.S. Department of Education in Washington, DC, and has authored over 100 journal articles and book chapters. He is presenting two workshops for Chicago area teachers in conjunction with MWERA. Teachers will choose between Thursday evening and Friday morning sessions that will include an opportunity to attend selected MWERA sessions. Interested teachers should contact Greg Marchant at (317) 285-8505 (Office) or (317) 841-3456 (Home); or Sharon McNeely (312) 794-2788 for registration materials.

For MWERA 94 registration information contact:
Greg Marchant, MWERA V.P. & Program Chair
Department of Educational Psychology
Teachers College, Ball State University
Muncie, IN 47306 (317) 285-8505
E-mail: 00gjmarchant@bsuvc.bsu.edu

***Eugene Garcia*, U.S. Department of Education**

Selected Sessions (*from over 100 sessions offered*)

Motivation Issues in Education
Issues in Validity
Teacher Attitudes and Beliefs
The Future of Electronic Publications
Full Inclusion of Exceptional Students:Three Perspectives
Context Considerations in Teacher Education
Statistical Modeling
Meet the Editors (with seven journal editors)
Research on Cultural and Multicultural Contexts
Testing Issues
Challenges to School Administrators
Success for All
Multicultural Issues in Research & Teacher Education
Teaching Educational Psychology (panel session)
Impediments in the Teaching of Research Design & Statistics
The Natural History of Mental Mapping
Deans' Forum on Research Faculty Roles & Rewards

What If You Could Only Attend One Conference This Year?

The answer might very well be this year's annual meeting of the Mid-Western Educational Research Association. With the affordable rates at the Bismarck Hotel in convenient downtown Chicago, and with the reasonable conference registration fee that includes Friday's lunch, MWERA is a bargain. With high standards for proposals, leaders in education as invited speakers, and timely workshops, this year's annual meeting will be of the highest professional quality. Add to this the friendly collegial atmosphere that MWERA is known for, and you have a great and enjoyable professional meeting.

TEACH 'EM TAPES to be available this year... a first for MWERA !

MWERA has arranged with Teach'em Tapes, an organization which has been recording major sessions at several national professional conferences and making them available at reasonable rates to members, to provide a similar service for our annual meeting this year. Selected major sessions will be tape-recorded and the tapes sold at reasonable prices. Order blanks will be available at the MWERA conference registration desk.

MWERA Election Results

1994 Ballot

The Secretary of the Association, Ralph O. Mueller, who also serves as Chair of the Tellers Committee, reported the results of the Spring '94 membership mail ballot as follows:

Vice-President:	Sharon McNeely, Northeastern Illinois University
Secretary:	E. Jane Williams, Columbus Public Schools
Council:	Jay Adler, Cary School District Donald Castle, Ashland University Richard Lipka, Pittsburg State University Joy McCullough, Trinity Western University Lori Nebelsick-Gullett, University of Nebraska Gregory Schraw, University of Nebraska M. Cecil Smith, Northern Illinois University

The above winners assume office as of October 1994. VP McNeely is responsible for the 1995 MWERA Conference. She will move on to President-Elect, President, and Past-President in subsequent years. The other officers serve two-year terms.

We welcome these dedicated members of MWERA and congratulate them on their success as elected officers.

Historical Study of MWERA Underway

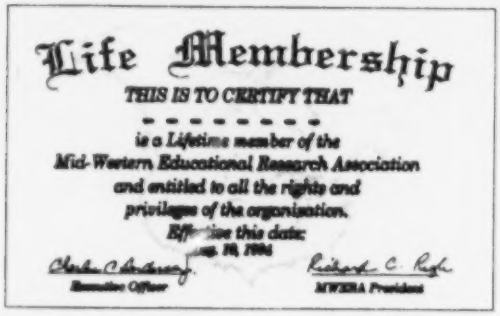
The Board of Directors of the Mid-Western Educational Research Association (MWERA) has accepted a proposal to conduct a historical study of MWERA. The proposal was authored by Theresa Strand and MWERA Executive Officer Charles C. Anderson. The authors, both charter members of MWERA which became operational in 1977-78, were colleagues for many years at the Midwest Field Office of Educational Testing Service (ETS) in Evanston, Illinois. Their extensive professional backgrounds provide a broad base of experience from which the study will be conducted.

The purpose of the study is to: (1) provide a narrative history of MWERA, from the early planning stages to the present within the broad context of education and educational research events and issues; (2) assemble and systematically present the details of MWERA's history from a chronological perspective; and (3) systematically organize and assemble the association's archives.

The study will explore various facets of MWERA's stability and growth, and their enabling factors. Primary and secondary data sources will be utilized, including available documentation and a series of interviews with persons who played leading administrative and/or innovative roles in MWERA's development.

Specific areas of interest will include MWERA's mission and goals, constitutional development, administrative structure and leadership, association policies and their perceived impact, milestone events, annual meetings, journals and other publications, continuing eduction workshops, electronic network, liaisons with other professional associations, and long-range planning.

628



Life Membership

THIS IS TO CERTIFY THAT

- - - - - - - - -

is a Lifetime member of the
Mid-Western Educational Research Association
and entitled to all the rights and
privileges of the organization.
Effective this date:

Executive Officer

MWERA President

A Life Membership is open to all members of MWERA, currently for $180. Members who have already paid their 1994 dues, will receive credit for amount paid.

MWERA Life Members	As of:	Institution
Dennis W. Leitner	1991/01/28	*Southern Illinois University*
Ayres G. D'Costa	1991/10/18	*The Ohio State University*
Kenneth A. Klewra	1992/02/04	*University of Nebraska-Lincoln*
Adria Karle-Weiss	1992/10/15	*Murray State University*
Jack K. Barshinger	1993/02/02	*DeKalb Schools*
Orpha K. Duell	1993/02/04	*Wichita State University*
Richard C. Smith	1993/02/25	*Roosevelt University*
Corenna C. Cummings	1993/03/02	*Northern Illinois University*
Linda K. Gunzburger	1993/03/20	*Chicago Medical School*
Bobbie M. Anthony	1993/06/08	*Chicago State University*
Bruce G. Rogers	1993/09/02	*Univ. of Northern Iowa*
Susan M. Brookhart	1993/09/14	*Duquesne University*
Gregory J. Marchant	1993/10/07	*Ball State University*
Mary Ann Flowers	1993/10/18	*Cleveland State University*
Ralph O. Mueller	1994/01/21	*George Washington Univ.*
Marcia L. Mentkowski	1994/06/02	*Alverno College*

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also any educational researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1994 dues of $10 for students and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to:* Charles C. Anderson, Jr., MWERA Executive Officer, 1332 Southwind Drive, Northbrook, Il, 60062; phone (708) 564-4796.

MWERA Membership Application

Name (first, middle initial, last) _____

Mailing address _____

City _____ State _____ Zip _____

Home phone ( ) _____ Office phone ( ) _____

Highest degree: _____ Area of specialization: _____

Institution/Employer: _____

MWERA division preferences: _____

E-mail address: _____

AERA member? _____ Division(s): _____

If applying for student membership, please include a copy of your student ID.

Mid-Western Educational Research Association - Annual Meeting Registration Form

Please print or type all information:

Name _____
Institution _____
Complete Mailing Address _____
_____
E-mail _____
FAX _____

Required of new members only:

Highest Degree _____
MWERA Division Preference _____
Major Area of Specialization _____
_____
Telephone: Office (___) ___ - _____
Home (___) ___ - _____

Is this your first MWERA conference? Yes _____ No _____

Annual Meeting Registration Fee:

Student (pre-registration $30, on-site $35), Regular/Professional (pre $45, on-site $55), Non-member (pre $50, on-site $60)
(Teachers attending Garcia workshop should contact Greg Marchant or Sharon McNeely)..... $ _____

Membership Dues:

1994 Membership dues (required for all participants and for registration discount rate)
- Regular $18, Student $10..... $ _____

1995 Membership dues - Regular $18, Student $10..... $ _____
Life Membership - $180 ..... $ _____

Conference Workshops (see following pages for details, workshop fees are $10 unless noted)

___W.12.A ___W.1.C ___W.1.D ___W.1.E ___W.1.F ___W.315.A ___W.315.B
___F.9.Lin/F.5.Lin ($5 total for both parts) (T.7.Med and F.915.Med contact Marchant or McNeely).. $ _____

MWERA Materials (all materials must be picked up at the registration desk at the conference, prices do not include postage):
Indicate quantities below:

_____ MWERA Membership Directory $5 ..... $ _____
_____ MWERA 94 Annual Meeting Abstracts (___ paper $4) (___ IBM $3) (___ Mac) .... $ _____
_____ MWERA mug $3.50 each ..... $ _____

TOTAL..... $ _____

**Registrants requiring special dietary needs for the Friday Luncheon should describe those needs and enclose with this form.*

Please make your check payable to: Mid-Western Educational Research Association (MWERA)

Mail this completed registration form and your check by October 1, 1994 to: Charles C. Anderson, MWERA Executive Officer
1332 Southwind Drive
Northbrook, Illinois 60062

HOTEL RESERVATION FORM - Mid-Western Educational Research Association Conference Oct 12-15, 1994

Please reserve: _____ Single room(s): $60 _____ Double room(s)-Double bed: $75 _____ Double room(s) -Twin beds: $75
Date and Time Arriving: _____ Date and Time Departing: _____

Name(s) _____ Affiliation _____

Address _____

Hotel Reservation must be mailed to the Bismarck Hotel (312) 236-0123 by October 1, 1994:

Bismarck Hotel, 171 West Randolph Street, Chicago, IL 60601

(Making the Grade : continued from page16)

solely on achievement] there would be a tremendous failure rate.

By choosing to let the completion of daily assignments count for 50% of the students' summative grades, Brad lowered the overall failure rate in his classes. Furthermore, establishing grades in this way made sense to him as a means of preparing students for future life roles in which they might only be rewarded for hard work.

Brad's use of daily individual assessment within his curriculum influenced students' construction of the meaning of curriculum changes he was attempting. His focus on task completion as part of the assessment process was interpreted by students as a message that learning wasn't as important as getting things done. Within their groups, students were frequently observed to divide the work among themselves, each student answering a set number of questions, then giving those answers to the group. Less-able students simply copied from other, more-able, students in the group. Although Brad believed using grades as a reward for completion of tasks would hold students accountable for learning, students were adept at figuring out means of completing the work and getting a satisfactory grade without significantly engaging in processes of science inquiry. As one student noted: "I'll learn just as much by turning in a copied paper as I will with a blank paper, and I won't get a zero" (Field notes, 1/24/90)

Brad recognized that the outcomes of cooperative learning, as he envisioned them, were not the outcomes he was experiencing; however, his long held beliefs regarding the nature of his students and the perceived need to provide external motivation for them to engage in class activities, constrained him from making changes in the way he implemented daily assessment practices.

The fact that students continued to work as individuals, even in groups, maintaining traditional behavior patterns, rather than engaging in cooperative activities, only confirmed Brad's beliefs that daily assessment was necessary in order for students to engage in learning activities at all.

Assertion II: Viewing his assessment role from an objectivist perspective, Brad saw little value in alternative assessments as measures of students' actual knowledge.

Brad perceived that he had an externally mandated responsibility to numerically rank students to be consistent with the grading policies set by his district. He considered formal assessment the most important indicator of students' achievement and believed that testing procedures which would report numerical scores were necessarily required for formal assessment. As he noted:

(9/11/89) There's a bit of apprehension there about not having that test score there to show somebody who wants to come and see how their kid's doing . . . an apprehension from the point of view of external forces looking at me and saying that you should be giving tests to assess performance standards.

(5/15/90) If you have to assign a grade, you have to have some basis for it so that means you have to do some kind of a test.

The perceived need to obtain test scores in order to support his grade decisions undermined Brad's sense of effectiveness as a teacher. As he implemented alternative assessment procedures that allowed students the freedom to express learning in their own way, he perceived that students did not provide sufficient information for him to judge exactly what they did know. As he read their responses, he gained little insight as to whether there existed a relationship between the curricular changes he implemented and student learning as represented in his statement:

(5/15/90) I don't know if they're learning any more or less or the same or whatever. I sometimes think that that's too complicated for us to even know. You just hope for the best. Give them some experiences and hope that they learn as much as they can from them.

Brad's ability to evaluate students' learning of chemistry concepts was also complicated by the fact that students' responses to open ended questions often did not reflect a substantial amount of factual knowledge. He was concerned that grade decisions he made based on limited data from alternative forms of assessment might be unfair or biased. This concern was associated with Brad's strong objectivist epistemological view of his role as assessor.

Within Western cultures, objectivism has had a major impact on how individuals believe they experience, or learn and think, about the world, particularly in the sciences. Objectivism views the mind functioning as a mirror of nature. From the standpoint of objectivism, knowledge is viewed as truths derived from direct observation, uninfluenced by human perception or values (Guba & Lincoln, 1989). Learning takes place as individuals directly perceive reality.

Consistent with objectivism, one can view the function of assessment to be to determine the extent to which students' mental constructs match these truths. Furthermore, the role of the assessor is viewed as comparable to that of a scientist interpreting nature in that, he or she evaluates students' knowledge by direct observation, uninfluenced by human perception or values.

When Brad made the decision to allow students to use their own ideas and language to express themselves on the tests he gave, he found that in order to make marking decisions he had to interpret students' responses and make subjective decisions regarding what kinds of answers to accept and credit. Since data for judging students' competencies were generally limited to their voluntary responses to questions, Brad found that he was unable to objectively identifying single correct answers. Faced with the dilemma of evaluating the viability of a student's knowledge and assigning a mark on the basis of incomplete information, he described how he felt:

(5/15/90) As you're reading through these things, you go crazy trying to interpret what they've said in terms of the criterion that you've set down. A lot of times the ideas are there but they're not clearly expressed and you have to take a lot of time to think about exactly what they're trying to

say in their answer. For me it becomes a very excruciating thing to do that.

You know to look at an answer that somebody wrote and try to say OK, is this an A, B, C, or whatever? It's tough. . . Some people seem to be able to do that quite easily, but I have a real hard time with that.

Brad's objectivist perspective is also evident in his concern that as he graded students' responses he might not remain consistent from the first paper to the last or that he might allow his personal feelings about a student to interfere with his evaluation. He stated:

(1/25/90) [The potential inconsistency in assigning marks] concerns me, but I'm not sure how valid the concern is. I've never really analyzed to see whether that's really the case or not. I'm afraid that may be happening, but I'm not sure. I don't know how you would go about evaluating to see whether or not I was actually biased against some kids or not, grading that type of question.

Because he believed fair and unbiased marking decisions could be achieved only when evaluation was approached objectively he viewed his marking decisions as having questionable reliability.

Brad struggled to come to terms with this dilemma. He valued alternative assessment procedures as a means for students to demonstrate success in learning from problem-centered chemistry activities. At the same time, he valued numerical reports of achievement because he perceived them as valued by the culture in which he worked. Brad's solution was to invent, what he believed to be, a criterion based form of grading. In this way he believed he reduced the subjectivity of the alternative assessment procedures he was using; yet, he was able to construct a numerical score for each student's test responses.

Brad's rationalization of how he assigned point values to students' responses on tests is represented in the following transcriptions:

(10/2/89) I tried to envision in my mind what I would think of as a pretty good answer, and then relate it in comparison to that . . . If they had some information that was providing some answer to the question, even though it may not have been correct, some were all messed up about the actual concept, that wasn't very clear, you could see that. I didn't feel I should give them a zero for that because they had in a sense done what I asked them to do in terms of trying to solve that problem to the best of their ability.

(12/15/89) If somebody came up with a response that in any way, had some reasonable chemistry in it in relation to what the question was, right or wrong, they got at least a one. There were some that I gave zeroes who just apparently put something down that had nothing to do with what the question was about. It was like they found a line in their notes and copied that down or something like that. And then from there on up fours were ones who came pretty close to a good correct explanation or whose explanation, if it wasn't right was really well thought out, showed some good thinking.

(1/25/90) I sit down and try to think through an answer that seems reasonable to me. And then I start looking at some of theirs and read over a bunch of them and get an idea of what they have produced and then try to come to some balance between the two.

Clearly, Brad faced uncertainty with each grading decision. Tversky and Kahneman (1974, 1982) suggest that individuals, faced with making decisions in situations of uncertainty, employ heuristic rules upon which they base their judgments. An analysis of the method Brad invented to score his students' assessments, in light of the theory proposed by Kahneman and Tversky (1982), indicates that the heuristic rules suggested by their research might also have been the basis of Brad's marking decisions. **Representativeness**, or judging the viability of the outcome based on its similarity to recognized viable outcomes of similar activities is seen in the entry from 10/2/89 . The entry on 12/15/89 is an example of **Availability**, or judging the viability of the outcome based on the frequency with which similar outcomes have been observed in the past. **Adjustment and Anchoring**, or making estimations of viable outcomes of events based on the available data is represented in the entry on 1/25/90. By using heuristic rules in assigning marks on tests, Brad rationalized that his grading scheme was less subjective. He believed that using these rules was a viable solution to his dilemma. Furthermore, through the use of heuristic rules Brad was able to construct numerical scores which he could use to support his grading decisions as he conferred with students, parents and others in the school community.

Assertion III: Conflicting beliefs about assessment and his role as assessor constrained the extent to which Brad was able to maintain assessment practices that matched his curriculum goals.

Conflicts among Brad's long held beliefs about assessment constucted in social and cutural contexts, and his newly evolving assessment beliefs are evident in Brad's case. On the one hand, Brad wanted his students to have an opportunity to demonstrate their knowledge of chemistry concepts in their own way because he recognized that the knowledge constructs of students varied on the basis of their experiences. On the other hand he was concerned that the manner in which he held his students accountable for their learning in chemistry would not be acceptable to others, including his principal who was a former chemistry teacher and described by Brad as "my model of the person I wanted to try and be like" (3/20/90). He believed that if he did not hold his students accountable for the factual content of a traditional chemistry curriculum, the quality of his teaching would be questioned also by other chemistry teachers in the district and by parents. The following comments represent the conflict Brad was experiencing:

(3/20/90) I'm so really tied into what other people think . . . as opposed to the specific task here of trying to look at how I teach. It's really hard for me to overcome that problem of knowing that there are going to be people who look at what I'm doing, and disagree with it and say hey, you're supposed to be up in front of that classroom putting on a big show here for these kids and your not doing that. Therefore, I don't think you're doing a very good job. And I have to be able to say, well, you know, I'm sorry, I'm doing what I think is right. But I'm having a hard time with that.

In response to the cognitive conflict he was experiencing, Brad began to introduce multiple-choice questions back into his assessment practices. For him it seemed reasonable to do so in order to resolve his concern that he could not demonstrate how much his students were learning on the basis of alternative assessments alone. He noted:

(9/9/90) I felt that I needed some sort of measure of what they learned. Or at least some way of doing it. Besides, they [alternative forms of assessment] took a long time to grade.

For Brad, multiple-choice tests met the need he felt for administering a "real assessment" which would measure what students knew and at the same time provide him an objective and rapid means for reporting scores. Such tests are clearly part and parcel of what Wolf, et. al. (1991) term the "testing culture" in American education. Since their development in the early 1900's, standardized multiple-choice national and state science tests have been increasingly used to evaluate student progress. As a member of a test development team for chemistry in his own state, Brad learned that only multiple-choice questions were considered appropriate for that test. Furthermore, multiple choice unit tests were provided by the publisher of the chemistry text Brad's district had adopted. Finally, when students from Brad's classes participated in the American Chemical Society "Chemathon" competition, they took multiple-choice tests to demonstrate their knowledge of facts and principles. Accordingly, as Brad struggled to make sense of the role assessment should play in his own classroom he tended toward accepting multiple-choice assessment as a necessary and appropriate solution to his dilemma despite his earlier expressed beliefs to the contrary.

Discussion and Implications

The purpose of this study was to describe one teacher's personal struggle to change his assessment practices and explicate the beliefs that influenced the assessment process. Brad's case is particularly salient in that, although among his peers, his teaching and assessment practices were viewed as exemplary within his school culture, he had observed that his "exemplary practice" was not meeting students' needs. This study, which relates Brad's reflections on the outcomes of his personal decision to change his curriculum and correspondingly, his assessment practices, provides an individual and perhaps unique perspective on the change process. However, examination of cases such as Brad's provides an opportunity for us to develop an understanding of some factors that may drive teachers' assessment decisions and a starting point for understanding how personal and cultural constraints may impact on teachers' responses to recent demands for change in science assessment practices.

Represented in Brad's story are common assessment concerns expressed by teachers. For instance, "Do my assessment practices show my students are accountable for learning and at the same time allow them to be successful within the parameters of schooling?" "Are my assessment practices reliable and my grade decisions fair?" "Can I ensure that my students' learning is represented by their grades?" (Barron, 1991; Haertel, 1991). As Brad changed his assessment practices, rejecting commonly accepted testing procedures in favor of alternative assessments, these concerns weighed heavily on his assessment decision making. Long term acceptance of single-choice-answer tests within the culture of schooling has led teachers, like Brad, to take for granted their acceptability as reliable instruments for gathering data to assign grades. In rejecting this taken for granted position on testing, Brad found himself having to think more carefully about what he was doing and why he was doing it when he made assessment decisions. Furthermore, since he had a great deal of positive public opinion supporting his existing practices, he was risking criticism from others in the school community as he moved away from practices that had been recognized as exemplary.

Calls for reform in science education suggest that assessment must be matched to the specific curriculum delivered within a given classroom setting and take into account the variability of students' approaches to learning and the outcomes that each student may achieve. However, the historical use of objective testing from grade school through college to rank children has encouraged stakeholders in the educational process to value the kind of data these tests produce. The development and use of imaginative assessments that probe higher level thinking and science problem solving skills is, therefore, unlkely to be a process that teachers can easily accomplish on their own.

According to Shavelson (1983), teachers believe that they must use scientific methods to determine grades because scientific methods produce outcomes that are reliable or "fair." Furthermore, teachers tend to believe that their grading practices produce grades that have a validity arising from the methods which they use to determine them. Problems arise, as in Brad's case, because teachers feel strong conflicts when the demands of grading systems which they believe have a scientific basis are perceived to be in opposition with the personal, developmental and learning needs of the students they teach (Manke & Lloyd, 1990).

Moss (1994) notes that insurance of reliability is a key to good measurement, but argues that common psychometric definitions of reliability based on objectivist epistemology are inadequate when non standardized or alternative forms of assessment are being used. Moss suggests that reliability of assessment procedures should be exam-

ined from a hermeneutic perspective which would allow "the voices of those who are most knowledgeable about the context and those who are most directly affected by the results" (students and teachers) to be heard (p. 10). Moss argues that, although neither a psychometric nor hermeneutic approach guarantees fairness, consideration of both approaches will lead to more informed understanding of assessment practices and the marking decisions that emanate from them.

Lakoff (1987) has also proposed that objectivism, or the claim that there is only one correct way to view the world, should be rejected as an epistemology. He argues that because individuals are a part of reality, "it is impossible for us to ever stand outside it and take the stance of an observer with perfect knowledge (p 261)." Rather, we should acknowledge that our knowledge is constructed from a particluar point of view. Lakoff further points out that from this perspective, "To be objective, we must be aware that we have a particular conceptual system, we must know what it is like, and we must be able to entertain alternatives. . . . Acknowledging alternative conceptual schemes does not abandon objectivity; on the contrary, it makes objectivity possible. (p. 264)

Lakoff (1987) and Moss (1994) clearly reject objectivism as an epistemology in favor of an account of objectivity which takes into account human experience and our inability to detach ourselves from that experience as we build conceptual schemes. Yet, teachers, as is represented in Brad's case, may have difficulty restructuring long held epistemological views. As a result of their biographical school experiences, teachers have likely constructed deep seated and complex systems of beliefs about what it means for an assessment "to be fair". The importance of impartiality and rationality in assessment processes is reemphasized in preservice teacher education. Textbooks (i.e. Howe & Jones, 1993) caution teachers to be systematic in establishing grades so as to avoid "unconscious bias and unexamined expectations that can cloud judgment" (p. 372). Finally, practicing teachers may be held accountable to others, outside their classroom, whose views of knowledge and assessment are grounded in objectivism. Thus, grades determined through this process are easily defended and rationalized. The pressure on teachers to implement assessment procedures that are characterized as reliable, unbiased, fair, objective, uninfluenced by values and beliefs etc., is an important factor in influencing decisions teachers may make about how to assess and how to establish criterion for grading.

Brad's case is particularly telling because his decision to implement change in his curriculum and in his assessment practices was self initiated, rather than an outcome of institutionalized efforts for school change. He was personally committed to change; yet, he was unable to reconstruct his beliefs about assessment in a way that would allow him to implement assessment practices that supported the curriculum innovations he wanted to attain. In the first place, the embeddedness of Brad's daily assessment practices in a concept of the school as workplace led to a significant proportion of a student's grade being attributable to factors other than what the students knew. Under these circumstances, students had little reason to learn chemistry concepts with understanding in spite of the changes Brad had made in the way curriculum was implemented. Hence, alternative forms of testing seemed no more effective in meeting students needs to demonstrate their knowledge than were multiple choice tests. Secondly, Brad's objectivist epistemological perspective clearly constrained his confidence in alternative assessment as a means for obtaining data he considered valid for reporting students' achievement even in cases where students did demonstrate substantial understanding of chemistry concepts.

If we want to change the face of science education, to promote cooperative, problem-centered learning in the curriculum, we must find ways to help teachers to restructure their beliefs about the purposes of assessment and grading within classroom contexts. As long as objectivism is considered the basis of fair and unbiased marking procedures, teachers will have difficulty in quantifying their evaluations of students' learning when alternative assessment is attempted. Likewise, as long as teachers are unable to construct tests that allow students to demonstrate success in learning in multiple ways, rather than in terms of a single numerical score, teachers will continue to make sense of assessment procedures that reward non-academic aspects of classroom achievement such as participation and hard work.

We must find ways to support individual teachers in their attempts to make changes in their curriculum and to develop alternative means of assessing students' understanding of concepts and skills. Certainly, there is a great deal of pressure from parents, students, and others who have succeeded in traditional assessment contexts to maintain these practices. The resistance of stakeholders in the culture to make sense of schooling in alternative ways constrains creation of a new culture where learning rather than work is a central goal of classroom activity. Before we place demands on teachers to change their curriculum and assessment practices, further research is needed which involves members of a school culture working trogether to explicate and analyze relationships that exist among culturally derived and individually constructed referents for assessment. Perhaps through these kinds of activities members of a school community may come to question the rationale for their assessment practices rather than take for granted that no change is needed or that change is impossible.

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Summarizing the Literature Review with Meta-analysis

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Abstract

Meta-analysis can be used as an adjunct to the traditional review of literature to summarize what has been previously found. Meta-analysis employs the study as the unit of analysis, and transforms the results into a common metric, the effect size. The effect size can be reported as either a correlation, or the difference between means, divided by the standard deviation. All statistical tests can be transformed into an effect size.

History of Meta-analysis

Since there are relevant studies with which any study can be compared, no single piece of research stands by itself. Traditional literature reviews provide a narrative summary of the studies, possibly providing a count of those studies which provided confirming results and a count of those studies that provided disconfirming results. Studies which did neither are often excluded from the literature review and from the literatureas well. More importantly, the extent of confirmation or disconfirmation will not usually be considered. In addition, the number of subjects analyzed in the study is usually ignored. Finally, studies using different statistical techniques are seldom considered on a common scale. Meta-analysis is an attempt to synthesize the relevant research considering three major factors of (a) sample size, (b) magnitude of significance, and (c) statistical test used.

These three factors result in an effect size, which can then be analyzed as a dependent variable investigating the relationship of various independent variables on this dependent variable of effect size. The exciting and potentially valuable aspect of meta-analysis is that these investigated independent variables likely were not the focus of any one study, but since they do vary from study to study they may account for the discrepant results.

There were two independent efforts which developed synthesizing approaches, one by Glass (1976, 1977) using the difference between means approach, and the second one by Rosenthal (1978, 1979) using the correlational approach. (See Rosenthal (1980) for earlier approaches to the problem.)

Effect Size in Terms of Differences Between Means

Glass quantified the idea of effect size proposed by Cohen (1969). Cohen's effect size is the ratio of variance accountedfor divided by the variance unaccounted for, which is similar to the *F*-test--only degrees of freedom are not considered. When the r^2 is small, Cohen's effect size is proportional to r. Glass's index, Δ, is conceptually similar to a z score and is simply the difference between the treatment mean and the control mean, divided by the standard deviation of the control group:

$$\Delta_{T\text{-}C} = (\bar{Y}_T - \bar{Y}_C) / SD_C \qquad (1)$$

Glass' effect size is a scale-free measure since the difference between means in the Treatment and Control groups is divided by the standard deviation. Thus, results on different measures can be readily compared.

If a researcher is planning on conducting a meta-analysis, there are various caveats and decisions that must be made that are beyond the scope of this paper. The three most readable references are Light and Pillemer (1984), Glass (1980), and Glass, McGaw, and Smith (1981).

The example in Table 1 provides further understanding. Suppose that four relevant studies exist in the literature, with the results and study characteristics as in Table 1.

Table 1
Development and Use of Effect Size in Terms of Δ

Study	Level of Stress	Dependent Variable	Means T	Means C	Standard Deviation	$\Delta_{T\text{-}C}$
1	High	A	62.1	60.5	8.0	.20
2	High	A	58.1	56.3	9.0	.20
3	Low	A	59.0	55.0	8.0	.50
4	Low	B	31.0	27.7	5.5	.60

Mean Effect for all studies: Δ = .375
Mean Effect for High Stress studies 1 & 2: Δ = .20
Mean Effect for Low Stress studies 3 & 4: Δ = .55

As indicated in Table 1, studies utilizing different levels of stress, studies employing different dependent variables, and studies having different standard deviations can be combined to produce a total effect size. The calculated Δ on each study eliminates the impact of different means and different standard deviations. The Δ does not eliminate the potential differences in treatments, but facilitates analysis of that potential difference. While the four studies support the notion that treatment is effective in increasing the criterion, (mean Δ of .375), the specific level of stress in the situation seems critical (mean Δ for high stress is .20 while the mean Δ for low stress is .55). If more than these four studies were available, the differential effects of high stress and low stress could be tested for significance.

Since Δ is usually not reported by researchers, Δ must be calculated by the meta-analyst. Appendix A (modified from Light and Pillemer (1984)), provides short-cut procedures for various situations.

Effect Size in Terms of Correlation

Rosenthal pursued the idea of aggregating study results from the correlational viewpoint, translating all results into a common correlation coefficient. (The reader aware of the General Linear Model and its ability to deal with both "ANOVA" and "correlational" types of designs will not be surprised that either approach can be used.) One can transform any statistical test into a correlation coefficient (r) value using, as a guide, the formulae in Appendix B (modified from Rosenthal, 1984).

Table 2

Development & Use of Effect Size in Terms of Correlation

Study	Means T	Means C	Standard Deviation	$\Delta_{T.C}$	r
1	62.1	60.5	8.0	.20	.10
2	58.1	56.3	9.0	.20	.10
3	59.0	55.0	8.0	.50	.24
4	31.0	27.7	5.5	.60	.28

Mean Effect for all studies: $\Delta = .375$; r = .18

Mean Effect for studies 1 & 2: $\Delta = .200$; r = .10

Mean Effect for studies 3 & 4: $\Delta = .550$; r = .26

The results in Table 1, analyzed with r would appear as in Table 2. The r value is obtained from:

$$r = \Delta / (\Delta^2 + (1/pq))^{1/2} \qquad (2)$$

where p and q are the proportion of subjects in each group. If the number of subjects in the two groups is the same, as is assumed for this example, i.e., p = q = 1/2, then:

$$r = \Delta / (\Delta^2 + 4)^{1/2} \qquad (3)$$

The mean r value is computed on the Fisher z transformed r value, which is then transformed back to the r value.

Major Uses

Now that the general procedures for calculating an effect size are known, we can go to the most valuable part of meta-analysis, *using effect size to aggregate and understand the existing literature*. If all previous studies produce the same effect size, then the interpretation is fairly straight-forward. Irrespective of differences in the studies (differences in type of test used, way data analyzed, level of stress, length of treatment, size of sample, or characteristic of sample includingethnicity, sex, age, sophistication, prior exposure, etc.), no study characteristic makes a difference.

However, studies in most content areas do not produce the same level of effect size. A valuable research activity can be to figure out why the various studies do not produce the same effect size. The research question becomes, "What is it that is related to (and eventually, causes) different effect sizes?"

There are four general ways to use effect size when the results are not consistent:

1. Similarly labeled treatments or programs may differ in important ways that can be identified. Although a researcher may refer to a set of treatments as similar, the treatments usually differ in terms of some attribute, either in the level of another variable, or in some aspect of the treatment.

2. Setting by treatment interactions may exist. A setting by treatment interaction is often common in educational research, and can provide valuable insight to a discipline. One should not expect a given treatment to work equally well in all settings. Therefore one should not aggregate results from the settings which produce different results.

3. The type of research design employed in a study can strongly influence the outcome. Different results can occur as a function of how the researcher designed the study. For instance, studies in most research areas document that volunteers react differently than subjects randomly selected. Well-trained interviewers will obtain different information than will untrained interviewers. An experimental study with a posttest obtained six months after treatment will probably produce different results than will one with an immediate posttest.

4. The particular analysis procedures that are used may be related to outcomes. For instance, one of the continuing concerns is the unit of analysis problem. Should an educational researcher use the individual subject as the unit of analysis, or should the classroom mean be used as the unit of analysis? If the teacher effect is potent, then using the classroom as the unit of analysis makes sense since all of those students in the one classroom were taught by the same teacher. If the treatment and dependent variable can be influenced by the entire school--a school effect--then it makes sense to use the school as the unit of analysis. Which level a researcher uses can influence heavily the magnitude of effect size.

Meta-analysis actually empowers the researcher to understand discrepant results. That is, if some studies report positive results and others report negative results, there must be a reason (or set of reasons) for these discrepant results. Meta-analysis provides the researcher with the information needed to do the detective work to uncover the reason(s).

Concerns about Meta-analysis

As with all analysis techniques, some applied researchers have inappropriately implemented meta-analysis, while some methodologists have identified concerns with the technique. While articles such as this one attempt to inform researchers, we cannot guarantee that all researchers will use the technique properly. We can, though, alert the reader to the four major concerns that have been raised, and evaluate those concerns.

The Apples and Oranges Problem

Most meta-analysis researchers combine studies which have used various research methodologies, various dependent measures, various kinds of subjects, etc. One can test to determine if such aggregation is prudent. If there

are significant differences, then those results should not be combined.

Use of Data from Poorly Conceived or Poorly Executed Studies

The quality of any piece of research is in the eyes of the beholder. Indeed, almost any piece of research can be critiqued by another researcher. But if numerous "low quality" studies, each erring on only one quality component, show a substantial effect size, then the conclusion should be that there is an effect size.

The bottom line is that the quality of the study can be investigated as an independent variable. Smith and Glass (1977) investigated "good" and "bad" psychotherapy studies and found that there was no difference in effect size due to the quality of the study. On the other hand, when these same researchers looked at the effect of class size on achievement, they found a significant difference between studies which used randomly assigned students as compared to those studies which looked at classes with students who were not randomly assigned. As a result, they limited their subsequent analyses to the higher quality studies--those which employed random assignment.

Bias as to which Articles Get Published

Most researchers know that it is difficult to publish non-significant results. So, when a researcher obtains such results, there may be a tendency not to write up those results. If the article is submitted for publication, journal reviewers are often inclined to review unfavorably "non-significant results," and some journal editors also have been known not to look favorably on such research results. Therefore, some researchers believe that the published research is biased toward larger effect sizes. Since research neither written nor submitted nor accepted for publication is extremely difficult to obtain and analyze in a meta-analysis, there are two procedures that meta-analysts have used to respond to this criticism.

The first method is to compare research that is published in referred journals with research that is available in non-referred sources, such as dissertations. The notion here is that dissertations will be completed irrespective of whether significance is obtained. Glass, McGaw, and Smith (1981) reported on nine meta-analyses which compared the effect size reported in journals with the effect size reported in dissertations. They found a substantial bias, with a larger effect size reported in the journals (.64 vs. .48). The results in the journals are one-third standard deviation more disposed toward the favored hypotheses of the investigators than findings reported in dissertations. There are a variety of possible explanations for such results. For instance, dissertation committees may impose more rigor, may require the research to be "more on the fringe," or may foster a committee approach to the design and conduct of the research. All of the above reasons could yield a lower effect size.

The second method for dealing with "fugitive literature" was proposed by Rosenthal (1984).

> *The fundamental idea in coping with the "file drawer" problem is simply to calculate the number of studies averaging null results that must be in the file drawers before the overall probability of a type I error rate can be just brought down to any desired level of significance, say p = .05. This number of filed studies, or the tolerance for future null results, is then evaluated for whether such a tolerance level is small enough to threaten the overall conclusion drawn by the reviewer. (p.108)*

Rosenthal and Rubin (1978) provide an illustration with their meta-analysis of 345 studies of the self-fulfilling prophecy. The mean effect size reported was 1.22, and it would require 65,000 unreported studies of effect size of .00 in the file drawers to pull this effect size down to where it wasn't significant. It is extremely unlikely that 65,000 studies finding non-significant results on the self-fulfilling prophecy have been conducted and not published because of lack of significance. Therefore we can feel secure that there really is an effect size due to the self-fulfilling prophecy. We might not be as sure of the non-published results in an area that is less well-documented as the self-fulfilling prophecy.

Non-independent Data when Several Results from One Study are Included

This fourth concern seems to the present authors to be the only real concern, but a major concern. One study, with its attendant aspects, may provide numerous effect sizes to the meta-analysis. For instance, one study may have included nine different, but highly correlated, dependent variables. Therefore, all of the unique aspects (including lack of internal validity) of that one study will impact on each of the nine dependent measures. A reasonable solution to this problem has been proposed by Tracz, Newman, and McNeil (1986) who extended the analysis technique of repeated measures to this non-independent data.

Summary

For research results to make any sense, they should be linked to aggregated results from previous studies. A common index such as r or Δ facilitates aggregation. Researchers are strongly urged to include effect size in their reports. The discussed concerns do not seem to question the value of reporting effect sizes. If effect sizes are not consistent, then further analyses should be undertaken to determine why the effect sizes are different.

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APPENDIX A

Calculation of Effect Size in terms of Δ from Various Statistical Procedures

Test of Significance	Effect Size Δ
t (equal n)	$2t / (df)^{1/2}$
t (unequal n)	$(t * (n_1 + n_2)) / ((df)^{1/2} * (n_1 + n_2)^{1/2})$
r	$2r / (1 - r^2)^{1/2}$
F	$r = (F*df_n / (F*df_n + df_d))^{1/2}$ (then use r to change to Δ)
z	$r = z / n^{1/2}$ (then use r to change to Δ)

APPENDIX B

Calculation of Effect Size in terms of Correlation from Various Statistical Procedures

Test of Significance	Effect Size r
$\times^2$	$(\times^2 / (\times^2 + N))^{1/2}$
z	$z / N^{1/2}$
t	$(t^2 / (t^2 + (n_1 + n_2 - 2)))^{1/2}$
F	$(F*df_n / (F*df_n + df_d))^{1/2}$

IN MEMORIAM

DONALD R. CASTLE

Donald Castle passed away suddenly on July 9, 1994. Don was an active member of MWERA for many years, Co-Chair of Division F (History and Philosophy of Education), and newly elected member-at-large of the MWERA Board of Directors. He was an associate professor of education at Ashland University, in Ashland, Ohio. Like most of us, he taught and advised graduate and undergraduate students, and served as advisor to student groups.

Don was also active in other professional groups, notably ASCD, OASCD, Ohio and national middle school associations, and the national association for at-risk students. He was a scholar as well as a teacher, publishing and presenting nationally in his fields of at-risk students and urban education. He served as a reviewer for Allyn & Bacon. He was in the middle of editing his first book, Affirming Middle Grades Education.

MWERA will miss his tireless and enthusiastic service. The faculty at Ashland University will miss his wit, his candor, and his wisdom. We take this opportunity to extend our sympathies to his wife, Judith, and their two sons.

(Credit for providing this In Memoriam text is given to Louise E. Fleming, Ashland University. Ed.)

Research Alive: All Our Children Learning

Jack Snowman, Southern Illinois University, Carbondale

The title of this column was, as I'm sure many of you recognize, taken verbatim from the title of a book written by Ben Bloom and published in 1981. I chose this title for two reasons. First, each of the six recently published articles that are summarized below deals with one aspect or another of children's classroom learning. The children who participated in these studies ranged from about five years of age (kindergarten) to roughly thirteen years of age (eighth-grade). Second, and more importantly, each of these studies is consistent with the basic reason why Bloom wrote *All Our Children Learning*. On page 1 of the Introduction, Bloom states that as a result of research on what he called *alterable variables*, "student learning can be improved greatly, and it is possible to describe the favorable learning conditions which can enable virtually all students to learn to a high standard. In their own way, each of the following studies describes those learning conditions.

How to Grow a Vocabulary: Read to Children Early and Often

In volume 86, number 1 (1994) of the *Journal of Educational Psychology*, Claudia Robbins and Linnea Ehri make the argument that because vocabulary size is strongly correlated with children's overall school achievement, it is important to understand how young children achieve their vocabulary growth. While it might be reasonable to expect most of this growth to come from structured classroom lessons, previous research suggests that direct instruction has a negligible effect. In one study cited by these authors, 27 fourth graders learned an average of only 85 targeted words in 19 weeks. Other research suggests that listening to stories has a much stronger impact on vocabulary growth than does direct instruction. But because of shortcomings of one sort or another in these earlier studies, a definitive conclusion about story reading as a direct cause of vocabulary growth in young children could not be made.

In the Robbins and Ehri study, thirty-three non-reading kindergarten children were given the *Peabody Picture Vocabulary Test-Revised* (PPVT-R) and classified as having either low, medium, or high levels of vocabulary knowledge. Children in each group were randomly assigned to hear either *A Crocodile's Tale* or *The Little Boy Who Cried Wolf*. Eleven target words thought to be unfamiliar to the children were substituted for familiar words or phrases in each story. Although these words were not defined, their meanings could be obtained from cues in the surrounding context. Each story was heard twice in the space of anywhere from two to four days. After listening to the story, children took a 22-item multiple-choice vocabulary test. Eleven of the items came from the story they heard and 11 came from the story they did not hear. For each item, there were four picture choices and a "don't know" option.

Children's performance on the unfamiliar words heard in the story reliably exceeded performance on the words not heard, indicating that listening to stories was an effective means of expanding word knowledge. But the size of the difference varied as a function of PPVT-R score: children who possessed larger vocabularies to start with learned more new vocabulary words than did children with smaller vocabularies.

Although the effect of hearing stories on recognition of the meanings of unfamiliar words was not large (children recognized an average of 1.24, or 11.3%, more definitions of words from the story they heard than from the story they did not hear), two things should be pointed out. First, the 11 target words were rather difficult. They included such words as decrepit, procure, query, abode, and chortle. Second, the cost of obtaining this result was almost nil. How much time and effort does it take to read a story or two to a child each day?

I Get By With a Little Help From My Friends

Recently, I asked my computer to search the ERIC database for articles dealing with cooperative learning for the years 1966 through 1993. Not to my great surprise it found a total of 2,712 articles. With such a large research base, one would think that all of the significant questions concerning cooperative learning have at least been asked, if not answered. Not so according to Amalya Nattiv of Eastern New Mexico University. In volume 94, number 3 (1994) of The *Elementary School Journal*, she reports on a study that sought to determine (a) if the known relationship between helping behaviors in cooperative groups and achievement gains exists among third-, fourth-, and fifth-grade math students, (b) if gender, grade level, or ability level of the students relate to gains in achievement, (c) if all helping behaviors relate to gains in achievement, and (d) if all students exhibit taught helping behaviors.

Each cooperative learning group included students of both genders, three math ability levels (based on standardized test scores), and various ethnic backgrounds. All students were given three weeks of instruction in how to help their team members work through math problems via direct instruction, role playing, modeling, calling attention to appropriate helping behaviors, and giving points to groups whose members exhibited helping behaviors.

Amalya used the cooperative learning format

known as Student Teams-Achievement Divisions (STAD). The STAD format includes direct instruction of new material, the formation of diverse student teams whose purpose is to prepare its members to do well on exams, individual improvement scores, and team recognition. Additional components for this study were initial team building, instruction on helping behaviors, and rotating students through different roles (e.g., solving problems, checking, coaching). Each team was videotaped an average of twice a week for five minutes each time.

The data analysis allowed Amalya to draw the following conclusions: (a) There is a positive and statistically significant relationship between helping behaviors in cooperative groups and subsequent math achievement for 3rd-, 4th-, and 5th-grade males and females. (2) Different helping behaviors have different effects on achievement. Of the eight helping behaviors that were examined ("received no help after requesting it," "gives explanations," "receives explanations," "receives other help," "gives other help," "asks for help and receives it," "gives answers only," "receives answers only"), "receives no help after requesting it" was the most influential, accounting for 9.4% of the variance in the math achievement measure, and was negatively related to achievement. The next most influential behaviors were "gives explanations" (3.9% of the variance), and "receives explanations" (2.6% of the variance). "Receives other help" and "gives other help" taken together explained less than 1% of the variance in the dependent measure. The last three behaviors were unrelated to math achievement. (3) Neither gender nor grade level was related to helping behavior, but ability was related. Students classified as high ability gave more explanations, other help, and more answers than did low ability students. (4) Although all students exhibited the helping behaviors they were taught, the more desired behaviors, such as "gives explanations," "receives explanations," and "asks for help and receives it," occurred more often than the less desired "receives no help after requesting it," "gives answers only," and "receives answers only."

The Elusive Transfer Effect

Past research tells us that learning disabled (LD) students do not perform as well in school as non-learning disabled students because of deficits in such processes as encoding, conscious use of tactics and strategies, and transfer of learned information and skill. To some degree, these deficits can be remediated by teaching LD students techniques for enhancing meaningfulness, distinctiveness of encoding, and retrieval of desired information. For tasks that involve learning to associate one fact or idea with another, the keyword mnemonic is a particularly effective device. As I have indicated in a previous column, and as Barbara Fulk, Margo Mastropieri, and Thomas Scruggs point out in volume 7, number 2 (1992) of *Learning Disabilities Research and Practice*, students quickly become proficient users of the keyword technique and significantly improve their memory performance in comparison to a variety of other instructional treatments. About the only desired outcome of keyword instruction that has largely escaped researchers is spontaneous transfer (also known as generalization). In fact, in an article titled "Mnemonic Strategies and Classroom Learning: A Twenty-Year Report Card (*Elementary School Journal*, volume 94, number 2), Joel Levin awards this area of mnemonics research a grade of D. In their study, Fulk et al. examined how well keyword instruction and attribution training helped LD students learn the meanings of unfamiliar terms from different content areas and then transfer that skill to new word lists one day and two weeks after the end of training.

Fifty-six sixth-, seventh-, and eighth-grade LD students were randomly assigned to either a mnemonic generalization training condition, a mnemonic generalization plus attribution training condition, or a rehearsal condition. The experiment consisted of three phases. Phase 1 involved one day of training with 12 words from different subject matter areas (e.g., social studies and science) and an immediate recall test. Phase 2 involved two days of practice with 10 words from different subject matter areas. Phase 3 was an unprompted generalization task that was administered one day and two weeks after the end of Phase 2.

During Phase 1 (Day 1), the mnemonic generalization training group was given explicit instructions in how to use the keyword mnemonic and was shown a set of 12 cards, each of which contained a target word (e.g., vituperation), a keyword (e.g., viper), and an illustration that incorporated the keyword and the definition (e.g., a viper speaking abusively to someone). The mnemonic generalization plus attribution training group received the same instructions and materials as did the mnemonic generalization training group. In addition, they saw two cartoon drawings, each of which was followed by a positive attribution message. The first cartoon depicted a student who had experienced success on a school task. This was followed by an index card which read: "Two main reasons why students usually do well on school tasks are these: (1) because they know a good way to remember important information, and (2) because they try hard as they use that method." The second cartoon depicted a student who had experienced failure and was followed by the message, "Two main reasons why students usually don't do well on school tasks are these: (1) because they don't know a good way to remember important information, and (2) because they don't try hard." Students in the rehearsal condition received the same set of learning materials for Phase 1 as did the other two groups. But instead of keyword instructions and illustrations, they received instructions in how to use a rehearsal tactic and simpler illustrations. For example, the card for "vituperation" depicted one person telling another, "Don't speak so abusively to me," with

the words "vituperation" and "scolding" on the top. During Phase 2, students received (along with the set of 10 practice words) a printed card that read, "1) repeat the word, 2) study the picture of the answer information, and 3) say the word and definition together." At the end of Phase 1, each group was tested for recall with production items (e.g., What does vituperation mean?) and matching items.

During Phase 2 (Days 2 and 3), each group reviewed the steps involved in implementing its particular technique, was told the purpose of the training, was reminded of the type of task for which the technique was appropriate, and was tested for recall with production items and matching items. The mnemonic generalization subjects received a set of 10 cards, each of which contained a target word, a definition, and the prompt, "Did you use the strategy?" Although the students had to generate their own keywords and interactive illustrations during this phase, one card listed the steps they had been trained to use and another card listed the criteria for an appropriate keyword. The mnemonic generalization plus attribution training subjects also practiced the keyword mnemonic on a set of 10 words, but received strategy use and attribution prompts (e.g., "Did you try hard and use the strategy?"). Students in the rehearsal group were given explicit explanations, prompting, and feedback of the rehearsal technique.

For Phase 3, the generalization testing, students were given new lists and told to study them with "the method that would best help them prepare" for the quiz that would follow.

The results of the training regimen described above can be fairly described as mixed. No differences were found among the groups for either of the Phase 1 recall scores. For the matching test administered after the first day of Phase 2 training, only the mnemonic generalization training group significantly outscored the rehearsal group. For the production test, both the mnemonic generalization training group and the mnemonic generalization plus attribution training group significantly outscored the rehearsal group. The scores of the two training groups did not differ significantly from each other. This last finding was replicated for both the matching and production tests administered after the second day of Phase 2 training. The one-day delayed transfer test produced no significant differences among the three groups. The two-week delayed transfer test produced no significant differences for the production test. On the matching test, however, the two training groups significantly outscored the rehearsal group.

Want to Learn More? It's a Question of Elaboration

Current cognitive conceptions of learning suggest that students learn more of a body of knowledge as they construct relationships among the ideas that make up that knowledge base and relate those ideas to what they already know. This phenomenon, which is generally known as *generative learning*, has a broad base of research support that stretches back over several decades.

One technique that has proven effective in inducing generative learning is elaborative interrogation. Previous research has shown that elaborative interrogation, the act of generating inferences while asking *why* questions, increases associations among and retention for facts from a reading passage for learners from 4th-grade through college. But, as Timothy Seifert points out in volume 85, number 4 (1993) of the *Journal of Educational Psychology*, these effects were obtained from materials (sentences and paragraphs, for the most part) that were easily reduced to a list of equally important facts because they lacked the superordinate-subordinate structure so typical of academic prose. The study reported on by Seifert was designed to investigate whether the elaborative interrogation effect would be as strong when it was directed only at the main idea of a standard paragraph. Because a main idea is naturally elaborated by supporting subordinate ideas, and because these supporting ideas may activate relevant prior knowledge, additional elaboration may be largely superfluous. A second concern driving Seifert's study was that the specific characteristics of the elaboration itself may influence memory for the target information. Data from a small number of previous studies suggest that why questions that lead to a correct explanation of some fact are more likely to improve recall of that information than questions that lead to nonexplanatory or incorrect explanations. For example, in response to the question, "Why would American woodcocks need to be fast and unpredictable?," a correct explanation would mention that some animals protect themselves by their ability to escape from enemies. An incorrect explanation would sound plausible (e.g., to catch prey), but be wrong. A nonexplanatory response would be vague or incorrect (e.g., to fly over lakes and rivers).

To test these two hypotheses, sixth- and seventh-grade students read two passages, performed either an elaborative or non-elaborative activity while reading the second passage, and were tested for associative memory and memory for details. The first reading passage provided students with general knowledge of how animals adapt to their environment, and was intended to serve as a basis for the elaborative activity they would be asked to perform while reading the second passage. The second passage described the characteristics and behaviors of three animals.

Students assigned to the underline-only group found alongside each paragraph the prompt, "Underline the most important idea in this paragraph." Students assigned to the underline-with-elaboration group were also directed to underline the most important idea from each paragraph. But the paragraphs in their passage contained an extra sentence that linked the underlined information to a particular principle of adaptation mentioned in the first passage. Students in the generate-elaboration group were instructed to answer the why

question that appeared alongside each paragraph (e.g., "Why would the snowshoe hare need to be white in color during winter?"). Students in the elaborate-with-study-sheet group answered the same questions as did those in the generate-elaboration group, but were also given the written summaries they had made of the first passage to use as a reference.

Because Seifert was interested in the effect of elaboration versus non-elaboration, his analysis compared the performance of the three elaboration groups with the performance of the underline-only group. Differences among the three elaboration groups were not examined. Only the generate-elaboration group (those who answered why questions) significantly outperformed the underline-only group on the associative memory test, and this was entirely due, as expected, to this elaboration group's performance on main idea questions. There were no statistically significant differences between any of the elaboration groups and the underline-only group on memory for details. As far as how well each group was able to relate the specific information from the second passage to the more general information from the first passage, all three elaboration groups significantly outperformed the underline-only group. Moreover, the effect sizes were moderately strong (ES = .85, .65, and .74 for the generate-elaboration, elaborate-with-study-sheet, and underline-with-elaboration groups, respectively). In order to determine whether correct explanations given in response to why questions improved memory for factual information, a conditional probability analysis was conducted. This analysis did not find a statistically significant difference between the elaboration-with-study-sheet and generate-elaboration groups and the underline-only group.

These findings support the hypothesis that students who engage in interrogative elaborative activity while they read learn more main idea information than students who engage in non-elaborative activities, and that such activity is more likely to stimulate recall of relevant prior information. Additionally, such activity does not appear to interfere with recall of supporting details.

Retaining Students in Grade Gets a Failing Grade (Again)

In an earlier *Research Alive* column (Summer, 1992), I pointed out that the practice of requiring students to repeat a grade because of unsatisfactory achievement continues to be a popular one despite an almost unbroken stream of negative effects that have appeared in the research literature over the past 20 years. Samuel J. Meisels and Fong-Ruey Liaw provide yet another piece of damning evidence in volume 87, number 2 (1993) of the *Journal of Educational Research*. Meisels and Liaw undertook their analysis because much of the prior research was conducted on relatively small samples and there was little data on the issue of early retention (grades K-3) versus late retention (grades 4-8). Both of these problems were addressed by analyzing a subset of data from the large, representative National Education Longitudinal Study of 1988 (NELS: 88), a government sponsored longitudinal study of student outcomes. The sample analyzed by Meisels and Liaw consisted of 16,623 eighth-grade students, 2,075 of whom were retained in grades K-3 and 1,128 of whom were retained in grades 4-8.

In response to the question, Who gets retained?, Meisels and Liaw found wide discrepancies on the basis of racial/ethnic background, gender, and social class. Thirty percent of all Black students, 25% of all Hispanic students, and 17% of all White students were retained at some point between kindergarten and eighth-grade. Twenty-five percent of males were retained as compared to 15% of females. Thirty-four percent of students from the lowest SES quartile were retained as compared to 9% of students from the highest SES quartile. Although the overall retention rate was greater for Blacks and males, early retainees were more likely to be White and female (despite the fact that early retention has a stronger negative impact on females than it does on males). The timing of the retention did not produce consistent effects. Early retainees outscored later retainees on some cognitive, emotional, and behavioral measures, but not on other measures.

Meisels and Liaw were also interested in knowing whether retention produces any academic benefits for students since this is an oft-cited rationale for invoking the practice. After controlling for students' gender, racial/ethnic background, SES, and maternal education, retained students had significantly lower grades and test scores by eighth-grade than did non-retained students. Also, retained students were about six times more likely than non-retained students to have learning problems and be assigned to special education classes, and were about twice as likely to have emotional or behavioral problems. But because the NELS: 88 data-set did not include scores on intellectual ability, Meisels and Liaw were unable to statistically control for that factor, and could not draw a definitive conclusion about the subsequent negative effects of retention. But analyses of other, albeit smaller and less representative, data sets that have controlled for initial ability, have reported negative effects on subsequent academic performance as a result of retention. The overall message from 20 years of research seems clear: grade retention is a practice that is inconsistent with, if not antithetical to, the philosophy of maximizing classroom learning.

Adolescents in the Classroom: Better Management Through Behavioral Engineering

As if the negative findings reported by Meisels and Liaw on the effect of retention aren't bad enough, there is at least one other undesirable consequence of the practice; students who are a year or two older than their classmates tend to become behavior problems. This

was the situation in which educators from the Charleston (MD) County School District found themselves in the mid-1980s. As standards for promotion were increased because of a state-wide reform effort, the percentage of eighth-grade students who were at least one year behind grade level increased from 34% in 1983 to 48% in 1988. Indices of student misconduct rose in concert with the retention rate. To help teachers deal with and reduce student misbehavior, Denise Gottfredson, Gary Gottfredson, and Lois Hybl designed a behavior management program that drew heavily from operant conditioning principles. (Despite being either ignored or maligned as the "empty organism" theory, this writer believes it offers sound and useful guidelines for helping students acquire a variety of new behaviors.) The program was evaluated in eight middle schools over a three-year period. The results of their evaluation were reported in volume 30, number 1 (1993) of the *American Educational Research Journal*.

The program was composed of four components: establishment of a school discipline policy, a behavior tracking system, teacher training in classroom organization and management, and teacher training in the administration of positive reinforcement. The school discipline policy that each school adopted had to clearly state rules for conduct, specify the punishing consequences for infractions of the rules, and specify positive consequences for exhibiting desired behavior. The behavior tracking system was a computer-based record of each student's positive and negative behaviors. Parents were kept informed of the status of their child's record and encouraged to follow through at home on whatever actions were taken at school. Teachers were shown how to improve their classroom organization and management practices by keeping high traffic areas free of congestion, making sure that all students could be seen by the teacher, making frequently used materials readily available, and clearly stating rules for behavior. (Readers who are familiar with the classroom management literature may recognize that this component was taken directly from the work of Emmer, Evertson, Sanford, Clements, and Worsham.) Lastly, teachers were trained in the appropriate use of positive reinforcement.

Because of differences in how the program was communicated to teaching staff by school administrators, transfers of administrative staff out of the target school, and differences in attitude toward the program on the part of key administrators, the researchers divided the eight schools into high, medium, and low implementation categories, with the latter category serving as a control group. The effect of the program was evaluated by comparing how students and teachers responded to several sets of rating scales administered at the beginning of the 1987 school year and at the end of the 1989 school year. These included the Classroom Environment Assessment (CEA), teachers' ratings of students in-class behavior, and the Effective School Battery (ESB).

Significant changes appeared in four of the five CEA ratings and, with one exception, only in the high implementation schools. Students (but, interestingly, not teachers) reported an increase in perceived classroom order (effect size = .62). Classroom organization, rule clarity, and teacher support were also judged as having increased (effect sizes of 0.53, 0.55, and 0.35, respectively). Rule clarity was also felt to have increased in the medium implementation school.

When teachers rated students' on-task behaviors, only teachers in the high implementation schools felt that students paid more attention to their academic work and disrupted the classroom less frequently (effect sizes = 0.09 and -0.12, respectively).

The statistically significant changes in ratings by students of their own misbehavior and of the rewards and punishments they received were more broad-based. Increases in self-reported rebellious behavior and receiving rewards were reported by students in all schools, although the increase in rebellious behavior was smallest in the high implementation schools. Only students in the high implementation schools reported receiving fewer punishments.

Finally, only students in the high implementation schools reported an increase in the fairness of rules (effect size = 0.52).

Voices in Education

Marlene Schommer, Wichita State University

Veteran leaders of education, as well as newer leaders, have been asked to respond to the following series of questions:

1. ***Is qualitative research accepted as legitimate on your campus?***
2. ***How do you view the trend toward qualitative research?***
3. ***Is there an increase in hostility toward those who use quantitative research methods?***

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Qualitative research is one way, among many, of gathering information and interpreting it. If one views qualitative research as sustained, reflective observation and interpretation, it is unquestionably the foundation of all science.

Unfortunately, like "authentic assessment" it has come to mean much more. For example, one leading proponent recently praised qualitative research, hailing it as an alternative to research methods that are theory-driven, hypothesis-testing, and generalization-producing. That's nuts. If research doesn't relate to anything we currently know (i.e., theory-driven), doesn't address a question of interest (i.e., hypothesis-testing) or produce knowledge that others can use (i.e., generalizable), then how can it even be called research? Dada science, maybe.

The biggest problem with qualitative research isn't that it isn't informative, necessary, and rigorous—it is all of these—but that it has devolved from a methodological approach into a social and political ideology. For example, it seems as though qualitative research has become inextricably linked with feminist pedagogy, multiculturalism, eco-sensitivity, human rights, lab-animal welfare, gay/lesbian advocacy, Democratic politics, and so on. This association with unnecessary political and social baggage causes many scientists to regard it with markedly greater suspicion than one would view, say, ANOVA. This is unfortunate.

Another problem is that qualitative researchers and philosophers of science have not maintained the kind of critical dialogue that would help consumers of the research to make sense out of it. For example, is qualitative research falsifiable? That is, if one accepts the notion that all understanding is contextualized, if all experience is embedded in culture, and if all knowledge is personalized construction, etc., then can any interpretivist claims be rejected? If so, we are not only post-structuralist, post-constructivist, and post-modernist, but probably post-scientific as well. That would be a shame.

Gregory J. Cizek
The University of Toledo, Toledo, Ohio

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Are qualitative research methods legitimate? Research is a creative act that can be done in many ways. Science, however, is a process with social norms designed to produce knowledge. The appropriate question, therefore, is whether qualitative methods effectively contribute to this process; one which, as I point out in my research methods book, turns research findings into knowledge.

In this operation, a series of individual judgements of the research must result in a consensus. These are judgements about the acceptability of the researcher's interpretation of the data, and the quality and representativeness of the data in relation to the constructs involved. As a consensus of approving judgments develops those judgments are made by those closest to the research topic. If these judgments are positive, those further from that field either judge for themselves or, respecting the expertise of others, include the findings as knowledge in their writing, and eventually their textbooks. But the experts must agree-is the globe warming? The process is the same for qualitative and quantitative methods, and social and natural sciences.

Qualitative research's legitimacy derives from its contributions to this process. Qualitative researchers can create a consensus about their findings and do contribute to knowledge building. When Becker insightfully concludes the dependency of handicapped persons may indirectly result from the expectancy of others instead of directly from their handicap, such findings change the typically perceived view. For acceptance, some qualitative research findings may require validation on a scale feasible only with quantitative methods. But, either way, qualitative methods contribute to knowledge.

So are qualitative methods legitimate? Certainly, so long as they present evidence meeting the approving judgments of intelligent researchers of any orientation as presenting a strong chain of reasoning supporting their findings.

David R. Krathwohl
Hannah Hammond Professor of Education
Emeritus, Syracuse University

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A wide variety of data collection methods has always been acceptable. The issue is not how the data are collected, but instead what view of knowledge is held by the researcher. The hostility is toward logical positivism rather than toward quantification. Observational and interview data, for example, are often summarized quantitatively by qualitatively-oriented researchers.

Jason Millman
Cornell University, Ithaca, New York

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Qualitative research is not only accepted in my circle of professional associates, it is regarded as a very powerful research option. I have experienced two very important, nationally recognized research breakthroughs as a direct result of turning to qualitative research methods—one in the arena of teacher evaluation and the other in understanding the state and status of current classroom assessment practices of teachers. I regard it as an immense powerful alternative. I sense no increase in hostility among my professional associates.

Richard J. Stiggins, Director
Assessment Training Institute, Portland, Oregon

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REVIEWERS FOR VOLUME 7

The editors gratefully acknowledge the work of the following people who reviewed manuscripts for Volume 7.

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643

In this Issue

This Issue demarcates a MWERA era characterized by retiring Executive Officer, Charles C. Anderson Jr., affectionately known to MWERA insiders as "Andy". Charles completed his final 3-year term as "the keeper of our books and archives" as of December 1994. The new Executive Officer is Jean W. Pierce, who is professor and chair of educational psychology at Northern Illinois University. Like Andy, Jean has had a long-standing association with MWERA. She served on the editorial team in 1980 when this Journal was first launched at Northern Illinois University. She has also served as Secretary and later as President of MWERA. The Cover photo for this Issue honors Northern Illinois University because of its historic role in nurturing MWERA.

This Issue presents our annual CALL FOR PROPOSALS from our VP and 1995 Program Chair, Sharon McNeely, Northeastern Illinois University. We also introduce our journal Features and our Feature Editors. In keeping with our philosophy of sharing the responsibility for this Journal we identify desired new Features and the need for new Feature Editors. See Association News (middle blue pages).

Ayres D'Costa, Susan Brookhart, and John Surber

ON THE COVER

Volume 1, Number 1 of the Mid-Western Educational Researcher was printed in October, 1980. Leonard K. Kise and Jean W. Pierce, colleagues in the Educational Psychology Faculty at Northern Illinois University, were the first editors. A shoestring budget forced production simplicity, and made reading the journal a challenge. Readers found a calendar of state association meetings, four articles, abstracts of five other articles, and an abstract of a concept paper written by a researcher who was looking for others with whom to collaborate.

The photograph on the cover shows "Le Baron," a stabile by Alexander Calder. The sculpture is located on the Northern Illinois University campus in DeKalb, Illinois.

Northern Illinois University enrolls approximately 25,000 students and offers programs in the basic disciplines, the arts, and the professions. NIU is organized into colleges of Business, Education, Law, Liberal Arts and Sciences, Professional Studies, and Visual and Performing Arts. Programs of study are offered in 130 contact areas in 37 academic departments.

The Educational Psychology Department offers programs leading to the degrees: Master of Science in Education and Doctor of Education. Areas of study include Human Learning and Development, Research Design and Data Analysis, Measurement and Assessment, Program Evaluation, Consciousness Studies, and Gifted Education.

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 3rd ed., 1983 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

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Working Toward Foresight and Follow-through
Lyn Corno, Columbia University
2

One-Year Stability of the Elementary Reading Attitude Survey
Joseph C. Kush, Duquesne University
Marley W. Watkins, Deer Valley Unified School District
Michael T. McAleer, Duquesne University
Vicki A. Edwards, Deer Valley Unified School District
11

Going Beyond the Literature Review with Meta-analysis
Keith McNeil, New Mexico State University
Isadore Newman, University of Akron
23

Factors Underlying Effective College Teaching: What Students Tell Us
Carolyn R. Benz, University of Dayton
Stephen J. Blatt, University of Dayton
27

Computer-Based Education: More Hype Than Help?
Jack Snowman, Southern Illinois University at Carbondale
32

MWERA Association News Section

Images of the Conference and some of the Speakers
16

Charles C. Anderson, Jr.
18

CALL for Proposals
19

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Working Toward Foresight and Follow-through[1]

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Abstract

This article considers recent investigations of the conditions that promote forward-thinking in young people, and the realization of personal goals. Five conditions are discussed: environmental affordance and press, mediational strategies, consequence management, and resources for coping. Although the potential for foresight and follow-through may exist in all of us, individuals have different learning experiences with respect to these qualities, depending on inequities in preparation and support. The article raises critical questions about these inequities and suggests ways that educators might help overcome them.

Bill Watterson's syndicated cartoon strip, "Calvin and Hobbes," is a virtual compendium of psychological insights into childhood. In one strip, little Calvin asks his "indispensible" pal, Hobbes the cat, "What do you think is the best way to get what you want? Is it better to hold fast and never back down, or to compromise?" Hobbes replies, "I suppose it's best to hold fast when you can, and compromise when you need to." Calvin's response is "That's a lot more mature than I think I care to be."

Most people are short-sighted about personal goals, and less than steadfast in their pursuits. *Foresight* involves action in reference to the future, and it's easier to live day-to-day. But foresight, prudence, or discretion--and the method of *follow-through* that accompanies it--have shown themselves to be necessary qualities for social evolution throughout history. The welfare of societies has always benefitted from human foresight and follow-through.

How are personal qualities like these given force in the social systems we create, particularly in education? How are they learned or enhanced by the people functioning in these systems? If we could clarify what makes communities and individuals inclined to "take the long view," and see their work as instrumental to long-term goals, then education might better influence future generations in this direction.

Some may say it's naive to imagine that education could help students plan out their lives, envision possible futures and their place in them, and give up the easier path of living day-to-day. Taking sustained action toward long-term goals instead, is particularly problemmatic for increasing numbers of young people, who daily confront the most serious kinds of socio-economic constraints. But it might be submitted that good educators help students work toward foresight and follow-through all the time--always have. And that whatever explanatory concepts have evolved about the practice of doing this ought to be more widely understood, as we've come to understand concepts that underly the practice of other things, e.g., conducting research.

According to the dominant conceptual frameworks in modern psychology, motivational and volitional qualities like foresight and follow-through are "socially influenced" and "cognitively mediated" (Day, French, & Hall, 1985). In English, we say that people help to shape their own destinies, within the context of various personal and societal resources and constraints. Potentialities develop. And society doesn't mold people all by itself. Some living situations afford better opportunities for particular potentials to develop, and press people toward them. People, in turn, are more or less inclined to note and seize opportunities at different points in their own developmental cycles.

These two empirical observations--that environments vary in affording opportunities (or affordance) and press, and that cognitive mediation is partly developmental--imply inevitable diversity in the arenas of human motivation and volition. And so the statement that "most people are shortsighted" will probably always be accurate. However, we know something now about the directions in which environments and people must move if they are to prepare and support individuals as they work toward greater foresight and become more volitional. Research in educational psychology has taught us some things about how people acquire a "future perspective" and learn to use available resources to accomplish long-term goals (Snow, Corno, & Jackson, in press). This research has also provided models of productive resource management.

Goal coordination and resource management are two of the intentional systems that psychologists believe underly broad constructs like foresight and follow-through. And the good news is that the functioning of each of these systems appears susceptible to intervention (see e.g., Schunk & Zimmerman, 1994). Strategic self-management can be taught, and it may allow some people to gain control over potentially problematic aspects of temperament such as impulsivity or slow response to change. Individuals can also use strategic self-management to function more successfully in resource-limited environments.

1. Keynote Address to MWERA Conference 1994

2. Author acknowledges helpful comments by Celia Genishi

So, any parent or teacher who might be able to intervene at the process level with children could have influence in critically important ways. The Big IF--if enough parents and teachers, counselors and social workers, did this for enough children in enough communities and institutional contexts--may be worth speculation yet. Perhaps over the long run we can increase the mean of this hypothetical "foresight/follow-through distribution," even if we cannot reduce its variance.

Overview

This article discusses some *conditions* that promote foresight and follow-through. In what ways can these motivational and volitional qualities be developed; in what ways *are* they being developed, socialized, or fostered in some places and with some young people right now?

In writings over the past few years I've tried to make the case for bringing volition into perspective with motivation in educational theory and research (see e.g., Corno, 1986; 1989; 1993; 1994). Emerging theory and evidence does support the role of volition in various aspects of learning and performance. But what *is* this modern information processing view of volition?

Theory from Heinz Heckhausen and Julius Kuhl (1985) suggests a "commitment pathway" connecting motivation and volition. Motivation establishes goals, while volition implements them. Motivation promotes goals while volition protects them. Motivation involves individual thinking about goals; while volition involves the initiation of processes for accomplishing goals. Motivation embraces foresight, while volition embraces follow-through. To bring important long-term projects to completion, individuals must regulate and coordinate the many instrumental steps necessary along the way. Both motivation and volition are important psychological components involved in getting, as Calvin says, "what you want."

My intent here is to offer a somewhat more practical agenda, as any search for supporting conditions is said to be. However, it will be clear that new research issues accompany these ideas as well.

The evidence to which I'll refer is varied. The research is not always conventional, but there is a lot to draw on. Volumes from specialized publishers such as Erlbaum, dedicated issues of archival journals, government-sponsored conferences, and research handbooks can all be used to sift out recurring findings regarding the relevant conditions that promote motivation and volition. The danger is to trivialize in reaching for general concepts; this field is extremely complex. Also, in this post-modern, deconstructivist era, certain research findings need to be greeted with skepticism; even the most concrete potential lessons benefit from a critical historical lens.

I shall quote several points made previously by Lee J. Cronbach. It was almost exactly 20 years ago now that Cronbach (1975) delivered his Distinguished Scientific Contribution Award address to the American Psychological Association on new possibilities for educational research ("Beyond the Two Disciplines of Scientific Psychology"). Many points in that address bear repeating today.

The Context for Selecting Concepts

I have five, general explanatory concepts to discuss--abstract concepts that have been objectified in various ways. I'll try to exemplify the nature of the evidence for each. These *five* general concepts recur in research-based efforts on the development of individual foresight and follow-through within various social settings and systems. They are: *Environmental affordance* and *press, mediational strategies, management of consequences*, and *resources for coping*, respectively. Each concept has been given recent and historical attention in empirical research; each also has a legacy in educational practice.

Affordance and press are long-standing concepts in ecological psychology, reified recently in the growing literatures of social constructivism, school, and curricular reform (see e.g., Lieberman, Saxl, & Miles, 1988). Mediational strategies have been the focus of much correlational and experimental research in educational psychology and subject matter learning over the past decade. Of course consequence management is behaviorism's soul; but how this plays into the more complex agendas of information-processing theories of motivation and volition is less widely known. Finally, resources for coping or restoring well-being are also fronted in modern theories of volition, which I shall try to explicate again today.

I will come in the end to the critical proposition that, like other presumably favorable dispositional tendencies, foresight and follow-through require opportunities to develop. The potential for forward-thinking and follow-through exists in all of us; but the experience of learning not to be short-sighted in life, and of pressing ahead to make things work for you, often appears fundamentally different depending on the circumstances in which it is learned. Not only does current educational practice potentially disadvantage individual foresight and follow-through along status characteristic lines, even *within* status groups, many of us do not learn to display these qualities along anything like a "normative" developmental trajectory (cf. Scarr, 1988).

The development of foresight and follow-through has sociological as well as psychological significance for individuals and societies, because these personal qualities predict performance outcomes in school and the workplace, and they do so over and above scholastic aptitude as conventionally measured by standardized tests (Willingham, 1985). As David Berliner (1992) has noted, employees are more frequently dismissed because of a failure to take personal responsibility than they are for poor skills in algebra. Misdirected or inappropriate effort on the part of individuals is judged to put the whole corporate enterprise at risk (Weiner, 1994).

Thus, any remarks I might make about ways to help children or youth toward foresight and follow-through must necessarily distinguish the critical features of contexts in which such learning takes place. Such suggestions cannot be quick fixes for social failings. In the same spirit of Kozol's *Savage Inequalities* (1991), perhaps one of the contributions this work might make is to further expose these differential opportunities to learn, in hopes that they might somehow be rectified by some generation some day.

BEST COPY AVAILABLE

The Five Concepts

Let's look first at the ecological concepts of environmental affordance and press, and consider them together. They situate the other three psychological concepts within the larger socio-political arena for learning about foresight and follow-through.

Environmental Affordance and Press

Environmental affordance for and press toward personal responsibility may well be necessary conditions for volitional self-control. The evidence is now textbook that forward-thinking is learned, in part through exposure and the experience of forward-thinking in life, in the vicarious and enactive modeling that teaches by example and appropriation, as well as in the expressed values and expectations of people who provide support along the way (see e.g. Bandura, 1986). From their extensive review of research on children of poverty, Knapp and Shields (1991) concluded that, without daily living environments conducive to initiating and sustaining forward-thinking in learning and behavior, conventional successes are hard won--in school and other effortful tasks.

The introduction of competing environmental models can help; emergent literacy programs for high-risk preschoolers have received significant support in longitudinal, experimental research (Campbell & Ramey, in press). A variety of school-based programs -- Accelerated Schools, "Success-for-All," and Comer's child development model-- are similarly anchored by favorable evaluation studies (see e.g., Comer, 1988; Levin, 1992; Madden et al., 1992). But this research strongly suggests that even high-quality competing models must be given increased rather than reduced exposure over time, and must be accompanied by social, economic, and political pressure demands, or offered assistance. As sociologist Robert Merton (1968) once observed, supports and opportunities tend to spiral upward or downward from wherever one begins. Thus, from Eliza Doolittle to Albert Bandura, we learn that without directed affordance and press, it's just too hard to gather and sustain the momentum necessary to internalize competing models.

Psychologist Robert Eisenberger (1992) has shown through a number of experiments that effortful behavior is experienced by most people as aversive. To get people to do things that don't come easily, the experience has to have secondary rewards. It may then be viewed as valuable, meaningful, or at least useful if not pleasurable in some personal way. And it is now recognized that these secondary rewards often aren't the usual idiosyncratic extrinsic reinforcers. For many adolescents, secondary rewards for motivated behavior involve the very kind of social interchange and peer support that seems so hard to come by in their everyday environments.

Now, let me illustrate more specifically the particular kinds of affordances and demands to which this literature refers. I submit two cases in point, but need to comment on the research.

The typical educational research study is no longer the two-group experiment noted by Cronbach two decades ago. Over the past three years of editing *AERJ* (which receives over 200 manuscripts a year from authors representing the broad constituency of AERA), we have seen increasing numbers of educational interventions supported by ethnographic or descriptive accounts of contextualized effects, rather than "true" experimental designs.

We seem to have come to an age that Cronbach (1975) and others ushered in, where: "observers are more like journalists than pure scientists, collecting data in one particular situation and appraising a practice or proposition in that setting, observing effects in context" (p. 124). Research has progressed to the generation of knowlege useful for practice because it has *examined* practice in particular education arenas. Cronbach said that: "Intensive local observation goes beyond discipline to an open-eyed, open-minded appreciation of the surprises Nature deposits in the investigative net. This kind of interpretation is historical more than scientific..." (p. 125).

One example of this kind of work is a unique investigation of the ways in which both formal and informal community organizations influence inner-city youth, conducted by Shirley Brice Heath and Milbrey McLaughlin in 1993. These authors used anthropological field methods to penetrate previously inaccessible community organizations in the hearts of urban centers. There Heath and McLaughlin's team found so-called "hopeful" youth who broke away from strong peer groups to make better lives real possibilities. Without leaving the inner city, these youth responded productively to competing environments that helped them take the long view on enabling actions and events. Notably, there were a handful of people, dubbed "wizards", who helped the hopefuls along.

Wizards were rarely official teachers or coaches; they were more often counselors or group leaders at local, informal youth organizations established within the inner-cities as safe houses for troubled teens. Some of these organizations were rule-breaking YMCAs; but more commonly, they were unaffiliated with organized groups. They were founded and sustained by informal groups of formerly troubled youth or particularly dedicated adults whose own personal experiences led them to this kind of work.

According to McLaughlin and Heath (1994), the wizardry worked on inner-city kids came about through affordance and press. The wizards created new opportunities, both literally and figuratively, for these youth to have different lives. They secured meeting places, recruited assistants from the ranks of gangs, and solicited donations of computers, tutors, and books. Capitalizing on the interests of the kids they served, they orchestrated productions of films and theatrics, art shows and concerts for community display--each of which developed self-management skills through a process of creation and performance. Because these activities put participants in touch with schooled concepts at the same time that they provided experiential feedback and rewards, they allowed the youth to see that experiences somewhere in-between school and games can serve these functions (Henderson & Cunningham, 1994, p. 266).

The youth centers stayed open after hours and on weekends; many youth spent most of their free time at the centers, in hopes of protecting themselves from peer oppo-

sition. The adults who administered programs became centrally involved in these adolescents' lives. Through their mediation and guidance, the wizards served as examples of how increased opportunities could be seized with favorable consequences. But they also actively pushed, cajoled, and pestered these youth in new directions, at the same time that they buffered them from peer pressure to return to unproductive modes of thinking and behavior.

Similar results can be found in research on the topic of "resilience" among inner-city students recently catalogued by Wang and Gordon (1994). Together, studies such as these identify affordances and demands for foresight and follow-through that have been brought successfully into adolescents' everyday lives under quite oppositional socioeconomic conditions. But affordance and press are also key influences on foresight and follow-through in school learning.

Which brings me to my second case--and that is the research on "achievement goal orientations" associated primarily with Carol Ames, Carol Dweck, and John Nicholls (see e.g., Ames, 1985; Dweck, 1988; Nicholls, 1984). Various correlational and experimental investigations of students' developing orientations towards school have now carefully uncovered a variety of threats to their long-term academic success. Lepper (1988) annotated these: comparative performance evaluation, presentation of activity as test, expectation of potential failure, punishments, and unnecessarily close surveillance.

Apparently, there are many identifiably "performance-oriented structures" in the average student's school experience. Beyond the controversial matter of competition, schools commonly reflect authoritarian teaching methods that discourage multiple paths to goals, and inflexible grouping and tracking arrangements. Indeed, performance-oriented structures are so locked into schools and so pervasive that they too are affordances for student learning (Maehr & Midgley, 1991). Unfortunately, they afford opportunities for students to learn the value of a performance orientation--that is, the tendency to view learning as simply completing a task or getting a grade to gain favorable judgments of competence. This is not the orientation most conducive to long-term success in education. To teach students the relative value of a mastery orientation instead (where learning is viewed primarily as constructing meaning--as an interpretive process of understanding reality), we must, this work suggests, significantly reform many of the things we conventionally do in schools.

And so Central Park East High School in New York City, and other schools influenced by this reform perspective, now emphasize the value of curricular activities that promote knowledge construction between teachers and students; that is, "instructional conversations" in which teachers and students confront challenging topics over extended time-periods (see e.g., Henderson & Cunningham, 1994; Meier, 1992). Similar "co-constructivist" interventions implemented systematically by teams of motivation researchers (e.g., Blumenfeld, et al., 1994) also find that, when teachers (a) work with students instead of talk to them, (b) balance intervention, withdrawal, critique, and encouragement in student interactions, and (c) structure reward systems to reduce the threat of failure, then deep learning and progressive mastery tends to occur (see also Ames, 1985; Csikszentmihalyi & Larsen, 1984; Moll, Amanti, Neff, & Gonzalez, 1992; Xu, 1994). Students, in turn, feel good about themselves as learners and become more likely to persist in school. Thus, in schools, affordance and press for foresight and follow-through can be defined to comprise a range of progressive mastery variables that may have functionally equivalent effects -- increased learning opportunities and time to improve, choices within limits, establishing sensible work-schedules, and discussion of tasks to do first. The staple progress charts of most textbook assessments are used to inform individual students of their growing mastery of a subject, not to display competence relative to others. As Judith Meece (1994) writes, in "high mastery" classrooms, "teachers modify lessons to increase their personal relevance, provide opportunities for peer collaboration..., and emphasize the intrinsic value of the learning material. Grades and other extrinsic incentives are rarely used to motivate students" (p. 36). Again, under conditions such as these, students expend more effort, report deeper processing of material, and more readily resist distractions in completing their work (see Pintrich & Schrauben, 1989). Research on schools that have been particularly successful with racial/ ethnic minority students supports the emphasis on a mastery orientation as well (e.g., Goodwin & Carter, 1993; Lucas, Henze, & Donato, 1990; Moll, et al., 1992). Unfortunately, as Linda Darling-Hammond has pointed out repeatedly (see e.g., 1994), with few exceptions, these kinds of reforms are not in place in inner-city schools.

Given growing evidence that expertise of all kinds is learned through extended and supervised practice on tasks like those to be performed in the future (Ericsson & Charness, 1994), expertise in "studenting" ought to be no different. Thus, unconventional youth organizations run by wizards for hopeful and "resilent" students, and progressive mastery school environments, are two complementary forms of affordance and press for developing foresight and follow-through within the experiences that young people encounter every day. Common sense suggests synchronizing these two different strands of research in future efforts to help all children work toward foresight and follow-through.

Mediational Strategies

Beyond the ecological influences are the underlying motivational and volitional processes in which human beings engage. Mediational processes of various forms--mostly cognitive and meta-cognitive --have been the focus of over 20 years of cognitive and social-cognitive research. As, Cronbach said in 1974, "We expect a close scrutiny of cognitive processes to be a profitable next phase of work.....", and it was.

Non-cognitive processes are increasingly given the same scrutiny. There is, for example, strong evidence that it helps people to define the strategies they can use to set and pursue goals, as well as the procedures that support commitments to the point of accomplishment. Much of this work I reviewed with Ruth Kanfer in 1993 (see also Schunk & Zimmerman, 1994). Environmental affordance and press may be necessary, but they are insufficient conditions for some percentage of individuals who seem to need explicit instruction in strategic procedures. Being taught ways to manage people

and tasks, as well as one's own (personal) motivations and thoughts, helps persistence and performance to improve.

One example comes from a series of Air Force recruit studies on air-traffic control conducted by Ruth Kanfer and Philip Ackerman (1989). These researchers found that with adult learners, complex learning can be well-supported by even minimal discussion of strategies for motivation and emotion control. Simply instructing the recruits to be conscious of what they were telling themselves about this task, and about ways to control excessive rumination proved sufficient to produce performance gains. The researchers' instructions to these subjects eliminated what has been labeled a "production deficiency" in the area of volitional control. With children as subjects, on the other hand, the problem often appears more complicated.

Children seem to need more explicit instruction in how to use relatively abstract motivation- and emotion-management strategies. They also need discussions of why it matters to set subgoals, and how they can productively budget time and energy in school, on homework, and on other challenging tasks. The deficiency in children--or, in better terms, the missing opportunity--is in "mediation" rather than in "production." That is, they actually need to learn the self-regulatory tactics and how to use them. Knowledge of strategies related to foresight and follow-through--how to control information processing, motivation, and emotion--normally develops after age 7, with wide individual differences marking this trajectory (Kuhl & Kraska, 1989).

An important observation from classroom-oriented research is that this "explicit instruction" finding tends to run along status characteristics as well as developmental lines (McCaslin & Good, 1994). Cronbach reported in 1975 that lower-performing, minority, and lower-SES children tend to benefit from explicit instruction more than other children (p. 121). The "benefits" of explicit instruction to which he refers are of course conventionally defined as increased standardized test scores. Although limited opportunities may indeed exist for early exposure to volitional strategies in some home environments within this society, it needs to be said clearly that there are dominant cultural values implicit in findings such as this. And only recently have research methods evolved to the point of penetrating home settings in a way that might challenge these claims. These findings have too often been misinterpreted as rationale for compensatory practices and imposed control in schools that serve large numbers of minority children.

As a result of notable efforts by Michael Pressley and Karen Harris, explicit strategy instruction is now becoming better known to educational researchers (see e.g., Pressley, Harris, & Marks, 1992). Experimental instructional interventions have begun to demonstrate favorable results. But longitudinal studies are rare, and many such efforts continue to meet with implementation problems. Most teachers don't currently teach cognitive or volitional strategies directly, and doing this well has proved challenging even for superior teachers (Pressley, et al., 1989). I would also question the curious nature of these (and other) educational programs that locate the implementation burden solely in the hands of teachers. Parents, coaches, and school psychologists also need to learn ways to inculcate and reinforce strategic self-regulation in children, because even the best instructional programs are short-lived and fade in appeal.

Moreover, directly addressing the motivational and volitional strategies that underly foresight and follow-through is the exception rather than the rule in published strategy induction studies (Dole, et al., 1991). And yet, we know from correlational research that students believe they are better able to reach their goals in the long run when they have these strategies available. When they are able to deliberately prioritize and coordinate multiple goals, to effectively manage their time, to monitor progress, and to control intrusive motivational or emotional states as they work, students tend to feel better about their potential for academic success (Britton & Tesser, 1991; Karabenick & Knapp, 1988; Macan et al., 1990; Pintrich & DeGroot, 1990). Again, it seems tremendously important to pursue alternative interventions for children from diverse backgrounds who might be assisted to learn these mediational strategies in ways that avoid rigidly prescribing procedures.

Another unconventional study illustrates this kind of work. In 1992, Luis Moll and his colleagues entered working-class Mexican and Mexican-American communities in Arizona to develop teaching innovations that drew upon what they called home-based "funds of knowledge." Overturning the prevailing view that working-class families are somehow as intellectually impoverished as they are economically, these researchers identified household and community resources used by extended families to develop in their children the essential knowledge and skills for autonomous functioning on culturally necessary tasks. Information about farming and animal management, knowledge about construction and building, and related business matters were historically endemic to the Mexican-American border populations that Moll and his group studied. In contrast to some other research on "culturally sensitive or responsive curricula," the emphasis of this research was on strategic knowledge and activities essential for household functioning and regional productivity, rather than on cultural artifacts such as story-telling, crafts, or dance.

The children's classroom teachers collaborated in the ethnographic research, and used the data collected in homes to generate academically rigorous instructional innovations that bridged between the students' worlds and their classrooms. There were units on cooking candy, equipment maintenance, ranching, farming, and masonry. These topics were used by teachers to instruct students in "inquiry processes, becoming active learners, and on strategically using their social contacts outside the classroom to access new knowledge for the development of their studies" (p. 138).

These researchers established what I view as a new definition of "homework," where "work at home" is brought into the classroom to further the agenda for foresight and follow-through (Hill, 1992). The importance of their work lies in the observation of the teachers involved that their classroom instruction prior to this ethnographic research tended to preclude these students using much of the knowl-

edge they already had, and to position the students as deviant in relation to the norms of the larger school community.

Managing Consequences

If knowledge gained from the first three sources or conditions I've discussed is to be sustained over time, there needs to be palpable and valued payoff for the efforts. Because people self-monitor and self-evaluate (that is, they seek feedback), they also look for reasons to persist or not (Mithaug, 1992). Social-cognitive theory provides many explanations for persistence beyond extrinsic rewards. Among the most critical, according to supporting research by Bandura (1986) and Schunk (1994), are positive feedback on personal performances and other evidence of progress.

Some still believe that education is all about managing consequences to reinforce effort; the "exchange of performance for grades" metaphor has been in the literature for thirty years (Becker, Geer, & Hughes, 1968). But, to work toward foresight and follow-through, children need to begin to manage their own consequences. As Deci and Ryan (1987) have argued, it's hard to learn to do that in conventional classrooms where consequences are managed prodigiously on students' behalf. Theorists agree that self-regulation of effort involves a gradual removal of the scaffold and a press to fly solo (Bereiter & Scardamalia, 1982; Brown, Collins & Diguid, 1989; Mithaug, 1992; Rogoff, 1993). So why don't more adults who work with children do this as a matter of course?

A study of parent-child interactions around homework, recently conducted at Teachers College (Xu, 1994), found that co-dependency is less risky emotionally for some parents. Other parents--again, many in distressed urban areas--have legitimate survival motives for remaining "in charge" beyond conventional points in their children's functioning. Research on teacher beliefs about their own effectiveness has also found that control of reinforcement is something teachers won't easily yield in classrooms where compliance is valued (see e.g., Bandura, 1992; McCaslin & Good, 1992; Pajares, 1992).

Beyond the need for a better understanding of the extent to which home and school systems really do much to instill personal consequence-management in children, we can't forget that communities also institutionalize ways of reinforcing attitudes and collectively valued behavior. Instead of local news plaudits, however, new opportunities need to arise for students who increase their efforts. We cannot continue to punish effortful behavior. When communities begin to ensure that doors will open to jobs, colleges, and related positions of authority, then students will have palpable signs of progress in working toward foresight and follow-through. Schunk (1994) calls this "direct" evidence of progress. This is as true broadly within society as it is within particular school systems.

Unfortunately, it was recently noted in a New York Times article that persistent students are more commonly rewarded upon graduation from high school with jobs at waiting tables. The structural problems of society ought not to be overlooked in attempts to teach strategies. John Buckner of the *Better Homes Foundation* in Massachusetts, recently likened the problem of homelessness to a game of musical chairs.

I think his analogy stretches to the problem of joblessness, as well as many other apparently "individual" problems. Buckner puts it this way, "Let's say that the musical chairs represent the amount of affordable housing available for the poor. And let's say there are ten people and eight chairs. Two people in particular are especially likely to be left standing when the music stops, because they're less quick, more polite, less aggressive, or whatever. Then let's say we created an intervention to help those people get chairs. You'd still end up with two people who don't have chairs" (Buckner quoted in DeAngelis, 1994, p. 39). Education that better equips a generation for jobs by fostering foresight and follow-through in its students still leaves many of them without jobs when jobs are too scarce.

Until there is social and economic progress on such fronts, educators should do more to support students who have to meet with life after high school. We can help them to direct their developing foresight and follow-through in ways that are productive, partly by increasing their understanding of relevant psychological processes.

Resources for Coping

One of the things that modern theory and research on volition rather uniquely emphasizes is the need to learn to find and use resources for coping. Clinical-psychological research long ago established that there are significant advantages when individuals can cope cognitively and emotionally in the face of both real and imagined adversity. The new work on coping in volitional psychology includes the notion that education can assist, individuals and the communities that comprise them, in learning to move forward despite real obstacles (Corno, 1992; Wang & Gordon,1994). Education in coping may be another necessary condition, in particular for youth to whom the college or employment doors do not readily open.

The most relevant studies are of self-reported strategies. Paul Pintrich (Pintrich & DeGroot, 1990) and Claire Weinstein (Weinstein & Mayer, 1986), and various personality/social psychologists (e.g., Cantor & Kihlstrom, 1987) have studied academic coping in college and pre-college students (see also Boekaerts, 1993). We know that many young people develop coping strategies that work exceedingly well. Unfortunately, these are often of the defensive, "tighten-up and turn away" (or self-handicapping) variety, rather than the more "open up, turn toward" (or self-sustaining) variety that modern volition theory advocates. Avoiding the investment of effort in learning and achievement is a mindful, volitional activity with alternative motivational roots (Covington & Beery, 1976; Rollett, 1987).

It is not uncommon, for example, to read studies which demonstrate that young people often set unrealistic goals, fail to learn from failures, and avoid success instead (see Eccles, et al., 1983; Rohrkemper & Corno, 1988). Or that they procrastinate in their work, blame others for mistakes, or display worse "social" pathologies when confronting disappointment. Some developmental research (Rollett, 1987) links unsupportive, restrictive intervention styles of parents and teachers with the emergence of effort-avoidance in children. The more teachers or parents use pres-

sure to motivate in such cases, the quicker effort-avoidance appears.

Again, we have with this research the noteworthy situation in which less-effective coping mechanisms are most often reportedly observed in younger students and students who have had the fewest opportunities to learn some other way (see e.g., Boekaerts, 1993). As David Berliner (1993) said recently, "Where we see (such problems in) schools, we also see poverty, inadequate health-care, dysfunctional families, and...neighborhoods..." (p. 640).

Modern theories of volition also distinguish between debilitating and intelligent effort-avoidance; that is, intelligent budgeting of minimal effort to reach desired goals (Simon's, 1982, concept of "satisficing"). Intelligent effort-avoidance or "disengagement" can be a healthy reaction to extremely demanding situations (Kuhl, 1984). Discontinuing work or temporarily reducing performance standards (little Calvin's strategy of "compromise") needs further study as an adaptive device that helps students to "restore well-being" (Boekhaerts, 1993).

This is one among several "resource management strategies" that volition theory suggests--that is, teaching students ways to use their own internal resources to cope with difficult situations, as well as ways to locate hard-to-find external resources for coping with challenging events. Resourcefulness in finding sources of support is a talent that needs to be developed. It often involves pausing to assess situations, reflecting on goals, and ruling out options; careful monitoring and pointed effort to alter perceived stressors, or to seek out sources of support (see also Suls& Fletcher, 1986). Envisioning oneself carrying out various plans of attack and compromising have now become staple recommendations of self-help programs, as have attempts to regulate negative emotions and regain self-control (Boekaerts, 1993).

Beyond the difficulties of students' external (living) conditions, they must also learn to cope with the well-documented hidden curricula of schools--repetitive tasks, passive lessons, and preferential treatment by teachers to name just a few. Coping is necessary for both motivational stress, such as boredom, and emotional distress, such as frustration.

Most of the literature that guides interventions in this area is based on clinical or cognitive-behavioral models (see e.g., Watson & Tharp's, 1993). A recent doctoral dissertation by LaVergne Trawick (1991) at Teachers College tried a short-term cognitive-behavioral intervention as part of a study-skills course for inner-city junior college students. Trawick found that introducing truly enhancing volitional strategies in the complicated lives of these students was easier said than done, even for an insider who knew the culture well (see also Trawick & Corno, in press).

Because I've been interested in this area, I'm always seeking new research to shed light on critical issues. A recent study conducted by Gottman, Hooven, and Katz from the University of Washington caught my eye in a press report (Chira, 1994). The study was billed as useful for helping parents teach their children how to manage emotions.

These researchers interviewed more-to-less purportedly "happy"middle-class families, over a period of a few years, about emotional issues in the family and with the children. They also observed parents as they worked with children to complete two developmentally challenging school-like tasks. Their diverse set of outcome measures included stress hormone levels in the children's blood and heart-rates as well as attention-span, behavior, and academic achievement. Scores were more positive on all these measures at age 8 when "parents paid attention to their own emotions and could teach their children self-awareness and self-control beginning at age 4 or 5 (Chira, 1994; p. 8)." Results like these are consistent with other research on self-control, much of which also happens to be conducted on middle-class families (Mischel, Shoda, & Rodriguez, 1989).

The University of Washington team concluded their work with a list of "principles for parents on how to coach their children's emotions," including things like "explore the emotion, don't ignore it," "validate and emphathize," and "consider alternative ways of dealing with the emotion." They also described examples of situations, in which the parents did this well and poorly, for use as reference points. Many clinically based interventions, including LaVergne Trawick's, follow this logic.

But post-modernism has taught us to reflect critically on recommendations like these. And doing that suggests that general recommendations are often naive or even unfounded. It used to be that the criteria for offering recommendations for practice were considered satisfied if research findings were educationally or psychologically sound, and buttressed by sufficient evidence. Well, we've learned from the past 20 years of educational research, that effecting change in the psychosocial functioning of children won't be accomplished by dispensing lists of principles based on middle-class data.

Even if the evidence were truly "sufficient"-- generated, for example, on diverse and representative samples-- lists of principles, offered to imagined audiences on research-studded platters, are still symbolic of a kind of scientific elitism. Principles have been deconstructed in the 1990s--and not just politically. Karen Zumwalt said much the same thing about providing teachers with lists of instructional principles derived from process-product research on teaching in 1982. The kind of work we do--in diverse schools and with many different student populations--has raised consciousness and humbled psychologists, perhaps in particular about what really can be accomplished in educational practice through research.

It has now become almost an old saw that many of the phenomena observed in education are so subtle and multi-layered, and so situated locally, that--as Cronbach wrote twenty years ago--general principles lack meaning. Findings don't "ring true" for all kinds of people and all conditions. This is not to say that families below the poverty line, or those in the upper socio-economic levels of society, would not benefit from research on coaching children in emotion control. It is that all general principles need to be tailored to contexts in which they're used.

Cronbach said, "As a researcher goes from situation to situation, the first task is to describe and interpret an effect anew in each locale, perhaps taking into account factors that were unique to that locale or series of events. As results accumulate, a person who seeks understanding will do his (sic) best to trace how the uncontrolled factors could have caused local departures from a modal effect. That is, generalization comes late, and the exception is taken as seriously as the rule...every community needs its own local evaluation of any program for change" (p. 124-125). This was certainly true of what Trawick learned in trying to teach coping skills to New York City junior college students, and I suspect it's true for interventions with younger children as well.

Summary and Conclusion

To sum up, a forward-looking perspective on realistic goals facilitates the effectiveness with which individuals actually realize their long-term goals (Lens & Gailly, 1980). But people work toward foresight and follow-through in different ways, depending on the societal, community, and familial opportunities they experience and begin to appropriate. More societal, community, and familial opportunities of longer duration force a kind of osmosis upon young people. A bombardment of models, high adult expectations, and preparation and support for motivational and volitional mediation in the context of recurring school-like events produces one kind of learning about foresight and follow-through. This is what Salomon and Perkins (1989) have called "low-road learning"--at its best. For most students so exposed, it does not take a lot of deliberate thinking about what is being taught for the transfer of knowledge to occur.

Along the margins of society, on the other hand, youth work toward these qualities under very different sets of conditions. Here they must take the "high road" (Salomon & Perkins, 1989). Either they capitalize intelligently on the all-too-few similar opportunities that might easily be missed; or, they resiliently "pull themselves up by the bootstraps." That is, these students have to learn to actively structure and restructure unfavorable circumstances and events, and to view even activities that are not "school-like" as opportunities for learning volitional skills. Hopeful students seize opportunities as they arise; and resilient students create opportunities that might not otherwise exist. Some have called this purposive striving; others have really swung out and called it "will" (Farrell, 1994). Whatever it's called, it involves using resources wherever they occur in a highly deliberate and determined way. Taking the high road is a much harder way to learn foresight and follow-through.

For such individuals, --in some youth organizations, early childhood programs, community centers, and schools-- there are some teachers, social workers, and counselors, who offer new possibilities for moving down this road that can be built into their present realities. As Milbrey McLaughlin (1993) said, "(wizards) did whatever was necessary to respond to needs as evident--not imagined--and to create the confidence and context of positive futures for these youngsters" (p. 64). But there cannot be enough wizards around. And, as I've tried to argue today, even the advantages of looking forward to what one might become have to be learned. The advantages of foresight are not automatically apparent in all too many young people's daily living situations.

Perhaps one thing that those of us in the educating and helping professions can do is to find ways to encourage our youth to view themselves, in Albert Bandura's (1974) words, as "partial architects of their own destinies" (p. 867). If we can model and promote adaptive-seeking after resources, and active use of these resources in ways that will help realize individual visions--perhaps we can help to make "possible selves" probable (Markus & Nurius, 1986). Anger and hopelessness, in contrast, clearly relate negatively to the kinds of outcomes I've described (Pekrun, 1992). In the end, success in this endeavor comes down to both preparation and support. We need to learn the lessons of decades of research on teaching and similar research in other professions; that to become effective, productive, or accomplished--whether the goal is teacher, lawyer, or salesperson--requires adequate preparation and support (see e.g., Darling-Hammond, 1994). And so it goes with academic achievement and other forms of recognized accomplishment. To effectively practice achieving--complete with foresight and follow-through--individuals must be accompanied towards foresight and follow-through. This is both the answer and the challenge.

There is a telling analysis by curriculum theorist Hugh Sockett (1988) of elite private boarding schools--historically, the training grounds for upwardly mobile adolescents. Sockett finds these schools to have long-standing traditions, formal policies and stated missions, that involve centering their curricula on ways to instill the qualities of "personal responsibility" in students. He lists among these "qualities of endeavor such as determination," "qualities of heed such as carefulness, concentration, and conscientiousness," and "qualities of control such as self-restraint and endurance." In this country, most public schools also include behavior related to these qualities among their benchmarks for student evaluation. Many elementary students receive grades in "participation" and "effort" measured largely by impression or anecdote. And yet, activities and evaluation procedures that teach participation and good work-habits are rarely part of the explicit curriculum agenda of the modern public school, which tends instead to emphasize cognitive academic goals.

In defense of the value of general explantory concepts such as the five I've outlined today, let me quote, finally, from Lee Cronbach (1975):

> A reasonable aspiration (for science) is...to develop explanatory concepts, concepts that will help people use their heads....To give a wide reach to our (scientific) explanations, we make experience cumulative by abstracting from it. The explanatory constructs that we find fruitful (then) combine into a view of man (sic), his institutions, and...behavior. The informed public projects each new circumstance against that background, and so is able to react more intelligently (p. 126).

Perhaps Hobbes should tell Calvin that it's time he become part of a better informed public?

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(continued on page 36.)

One-Year Stability of the Elementary Reading Attitude Survey

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Abstract

This study examined the one-year stability of a measure of children's attitudes toward reading. Two hundred and eighty-nine students in grades one through five completed the Elementary Reading Attitude Survey (ERAS) at the beginning of two consecutive academic years. For both years, reading attitudes were normally distributed across recreational and academic subscales as well as the total reading attitude score of the ERAS. Substantial test-retest correlations were found both for the subscales and for the total score, reflecting good stability for the instrument. Non-significant grade differences were observed, however females consistently expressed more positive attitudes toward reading than did males. Implications for the classroom and directions for future research are provided.

Without doubt, improvement of children's reading in the public school setting remains one of the most important functions of contemporary education. Attitudes about reading are, arguably, formed as a result of repeated success or failure with the task of reading. While students with good reading ability may have positive attitudes toward reading, students who are poor readers often have to overcome negative reading attitudes in order to improve their reading skills (Johnson, 1981).

Teacher perceptions of student attitudes toward reading do not always match attitudes held by their students, and may be based to a greater degree on reading achievement (Swanson, 1985). Even though student reading attitude is commonly identified as an important area for student growth (Quinn & Jadav, 1987), very little time is devoted to fostering favorable attitudes to reading in the schools (Greaney, 1991; Heathington & Alexander, 1984). This may be due to teacher pressures to focus on basic skills, or from the belief that improving reading achievement will indirectly improve students' attitudes.

Young students seem to hold positive reading attitudes early in the development of their academic skills (Guthrie & Greaney, 1991), but with repeated failure may begin to view reading in a more negative light (Swanson, 1985). Good readers generally have more positive attitudes toward reading than poor readers (Wigfield & Asher, 1984), although only moderate correlations (.20 to .40) are typically found between reading attitude and achievement (Deck & Barnette, 1976; Roettger, Szymczuk, & Millard, 1979). As Mickelson concluded (1990), research on attitude-behavior relationships has yielded contradictory and uncertain outcomes (p. 48).

The uncertainty regarding the longitudinal stability of reading attitudes has resulted, in part, from the use of inadequate attitude scales (Marjoribanks, 1992, p. 945). Before questions concerning predictive validity can be answered, the short- and long-term reliability of the measures used to assess reading attitude must be established. Classroom teachers who wish to monitor changes in student reading attitudes from the beginning to the end of the school year will want to avoid scales which do not provide consistent, reliable measurement. Similarly, the effects of educational interventions targeted towards at-risk students can be evaluated only if the scales used to measure reading attitudes reflect true changes in reading attitudes, rather than random score variation. Therefore, this study examined the one-year stability of a measure of reading attitude, the Elementary Reading Attitude Survey (McKenna & Kear, 1990).

Obviously, a one-year test-retest interval will be dependent upon both the psychometric properties of the ERAS and the stability of the reading attitude construct. Typical test-retest correlation coefficients are based on shorter intervals, normally between several weeks and few months. Certainly, a one-year stability coefficient will be moderately decreased as a function of both the time interval between the first and second administration of the test and as a function of the childrens' development. Since physical, maturational, psychological and situational factors will all serve to affect the temporal stability of the ERAS scores, the purpose of the present study is to determine to what extent this will occur. Because real-life instruction and academic interventions are typically measured in intervals closer to a year in length, rather than the shorter periods of time

for which test-retest reliabilities are normally calculated, this study reflects an important addition to the existing body of knowledge concerning the reading attitudes of children.

Method

Participants

Two hundred eighty-nine students (139 male, 150 female) enrolled in grades one through five of a southwestern, suburban school district served as subjects. Students were randomly assigned to teachers in one of seventeen classrooms. Ethnic status, as reported in school records completed by parents, was: 94% White, 4% Hispanic, 1% Black and 1% Asian. The socioeconomic level of the school was judged to be middle-class, based upon the proxy measure of percentage of students (10% or less) participating in free or reduced-cost lunch programs (Peng, Wang, & Walberg, 1992). Single-family homes comprised 76% of the housing, and more than 50% of the parents had some college education.

Instrument

The Elementary Reading Attitude Survey (ERAS) (McKenna & Kear, 1990) is a 20 item public-domain questionnaire developed for use in grades one through six. Pictorial representations of the comic strip character, Garfield the cat, are presented on a 4-point scale which asks children to rate how much they like to read. Each item presents a brief, simply-worded statement about reading, followed by four pictures of Garfield. Each Garfield pose shows a different emotional state ranging from Very Happy to Very Upset. Children circle the picture that reflects how they feel about the particular statement. Responses are summed and transformed into percentile ranks via national norms tables. Percentile ranks are obtained for total reading attitude and two component subscales: Recreational reading attitude and Academic reading attitude.

The ERAS was normed on over 18,000 students in Grades 1-6. Children were drawn from 95 schools across 38 states. Internal-consistency coefficients ranged from .74 (Recreational subscale at first grade level) to .89 (Total scale at grades 4-6). The intersubscale correlation was .64 and a factor analysis of the normative sample provided construct validity evidence supportive of the claim that the measure's two subscales reflect discrete aspects of reading attitude. Comparable internal-consistency estimates have been reported for the ERAS when it was applied to a small, independent sample of children (Allen, Cipielewski & Stanovich, 1992); and concurrent validity with other measures of reading attitude has been shown as well (Estes, Estes, Richards, & Roettger, 1981; Marjoribanks, 1992).

Procedure

Students completed the ERAS in the fall semester of two consecutive school years. Administration was given to intact classrooms. Teachers read the directions aloud while the students read along silently. Following several practice items, students completed the 20 items of the questionnaire.

Completed ERAS forms were scored by the experimenters according to standardized instructions provided by McKenna and Kear (1990). Raw scores were converted to standard scores (M = 100, SD = 15) by a computer program (Watkins, 1992) which were used in all subsequent analysis.

Results

Table 1 presents descriptive statistics for the Total sample and for males and females for both administrations of the ERAS. Responses for the Recreational, Academic and Total scores were relatively normally distributed with mean for all scales near 100 and standard deviation near 15. Score ranges varied approximately two standard deviations above and below the standard score means.

Table 1

Means, Standard Deviations, and Ranges of the Elementary Reading Attitude Survey for the Total Sample and by Gender

	Mean	SD	Minimum	Maximum
Recreational (Test)	100.80	14.89	54	128
Male	96.79	15.41	54	127
Female	104.51	13.41	68	128
Academic (Test)	100.69	15.12	58	134
Male	97.38	14.96	58	131
Female	103.76	14.67	67	134
Total (Test)	100.80	15.04	60	135
Male	96.78	15.11	60	131
Female	104.51	14.02	70	135
Recreational (Retest)	98.89	16.27	55	127
Male	93.31	16.49	57	127
Female	104.05	14.28	55	127
Academic (Retest)	100.99	15.12	61	127
Male	96.64	15.19	65	126
Female	105.01	13.92	61	127
Total (Retest)	99.94	15.72	53	128
Male	94.37	15.63	57	128
Female	105.11	13.98	53	128

Table 2 presents correlation coefficients for the Total sample and for males and females for both administrations of the ERAS. All correlations exceeded the .001 significance level. Intersubscale correlations were .65 and .63 for test and retest administrations, respectively. These results are almost identical to the intersubscale correlation of .64 reported for the normative sample. The test-retest reliability for the Total ERAS scale, following a one year interval, was .43. A series of Fisher r to z transformations

indicated non-significant gender differences across all correlations. That is, test-retest correlations were of equal magnitude for boys and girls.

Table 2

Test-Retest Correlations for the Elementary Reading Attitude Survey for the Total Sample and by Gender

	Academic (Test)	Total (Test)	Recreational (Retest)	Academic (Retest)	Total (Retest)
Recreational (Test)	.65	.89	.43	.31	.41
Male	.63	.89	.34	.27	.35
Female	.63	.88	.41	.25	.37
Academic (Test)		.92	.32	.34	.37
Male		.91	.24	.29	.30
Female		.92	.32	.32	.36
Total (Test)			.41	.36	.43
Male			.32	.31	.36
Female			.40	.32	.41
Recreational (Retest)				.63	.90
Male				.58	.89
Female				.61	.89
Academic (Retest)				.90	
Male					.89
Female					.90

Note: All correlations $p < .001$.

A series of three factorial ANOVAs, 2 (gender) x 5 (grade) were performed on ERAS-Recreational, Academic and Total scores, with scores for both administrations serving as repeated measures (Huberty & Morris, 1989). Significant gender differences were found for the Academic ($F(1,279) = 28.50$, $p < .0001$); Recreational ($F(1,279) = 44.68$, $p < .0001$); and Total ERAS scores ($F(1,279) = 44.16$, $p < .0001$). Nonsignificant grade effects were evidenced for all three scales, however, significant gender by grade interactions were found for the Recreational ($F(4,279) = 4.21$, $p < .01$) and Total scales ($F(4,279) = 2.96$, $p < .05$). Post-hoc examinations indicated that for both administrations of the ERAS, and across all grade levels except second, girls exhibited significantly higher Recreational and Total attitude ratings than did boys. Only at the second grade level were males and females found not to be significantly different.

Discussion

Results of the present study indicate moderate one-year stability of children's attitudes toward reading as measured by the Elementary Reading Attitude Survey. Significant test-retest reliabilities were evidenced for the Recreational and Academic subscales of the ERAS as well as for the Total Score of that measure. ERAS stability was also demonstrated across grade levels one through five.

Additionally, the ERAS was found to be an equally reliable measure of reading attitudes for both boys and girls, even though girls consistently expressed more positive attitudes toward reading than did boys. This result is consistent with previous research which suggests that girls tend to have more favorable attitudes to reading than boys (Greaney & Hegarty, 1987; Guthrie & Greaney, 1991; Smith, 1990). In the present study, the single exception to this trend occurred for beginning second-grade students, where girls and boys had similar reading attitudes. It is conjectured that this outcome can be attributed to a unique interaction between personal characteristics of these students and teachers, since boys' attitudes declined again the following year, although neither specific instructional program nor method could be identified which was unique to that grade level. The developmental pattern for girls was much more consistent, showing better developed reading attitudes than boys at both younger and older grade levels. Although unfortunate that the improvement in reading attitude shown by boys was temporary and not maintained for any extended period of time, we know that teachers can impact the attitudes that their students develop through the use of specific classroom techniques (Barnett & Irwin, 1994; Lehr, 1982; Wigfield & Asher, 1984). Future research should examine these strategies and techniques in greater detail.

In the early grades, boys tend to be identified more frequently than girls as problem readers (Tittle, 1986), and, on the whole, do not achieve as well as girls in reading (Bank, Biddle, & Good, 1980) and spelling (Allred, 1990). This convergence of evidence regarding young boys' difficulties in reading attitude and achievement is as problematic as the information concerning older girls' adversity in mathematics and science (Tittle, 1986). While the reading attitudes of girls, of course, should not be neglected, results of the present study suggest that educational attention should be focused on boys who appear to begin school with poorer attitudes toward reading and subsequently progress through school without showing any sustained improvement (National Center for Education Statistics, 1992).

As predicted, the finding of a significant, but moderate one-year, test-retest correlation of .43 reflects a rather substantial drop from the typical short-term, test-retest range (.70 - .90) found with most reading attitude measures, but is consistent with long-term trends for reading attitudes (Smith, 1990). Current results demonstrated high subscale correlations at each of the five grade levels, which did not vary significantly across time. On the whole, the ERAS appears to be a reliable measure of children's overall attitudes toward reading, as well as their specific attitudes toward Academic and Recreational reading. Reading teachers who utilize the ERAS may feel comfortable that the scale will provide consistent scores over periods of up to one year. Future research, however, should examine the stability of

reading attitudes over a longer time interval. Although the present findings indicated relative equality across five grade levels, a longitudinal design which follows the same cohort of students over a longer period of time, with a particular focus on possible developmental differences for boys and girls, would better address this question. Additionally, future research should investigate the differential predictability of the ERAS subscales and reading achievement. Specifically, research should explore the predictive utility of both the Recreational and Academic subscales of the ERAS, and the stability of these subscales for both boys and girls across several grade levels.

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663

MWER Feature Editors

At the annual meeting of MWER Editors, Editorial Board Members and MWERA Directors in Chicago, various suggestions and new ideas were presented for the Journal. This Issue launches the eighth volume of MWER. It is therefore appropriate to announce our new Book Review section and introduce Dennis Leitner as the new Feature Editor responsible for this section.

An informal survey of MWERA members was conducted and it indicated very strong support for this new section. Members would like to see reviews of professional level books. There was also some support for reviews of textbooks and tests, but no support for reviews of educational software and media. Dennis Leitner is a Past president who has been very active in MWERA affairs and now serves on the MWER Editorial Board. He teaches in the department of educational psychology at Southern Illinois University.

This is also an opportunity for us to introduce our other Feature Editors. Jack Snowman serves as the Feature Editor of the popular "Research in Action" review article which appears twice a year in MWER. Jack was elected to serve a two-year term on the MWERA Board as Member-at-Large. He teaches in the same department as Dennis. Also continuing as Feature Editor is Marlene Schommer who writes our VOICES article also on a twice a year cycle. Marlene teaches at Wichita State University.

We need Feature Editors to develop other sections for MWER. One feature that needs coordination is our Prominent Educator Interview section. Your challenge, should you accept it, is to identify a prominent educator, run your choice by the editorial team, conduct an interview, and write it up for MWER in a manner that is useful to members. This could be like inducting your favorite "big name educator" to our informal Hall of Fame, although we have never spoken of it that way.

Also under development are ways of making MWER available through the electronic medium. This new superhighway has been acclaimed as the futuristic way to go. But we are not quite sure how best to get on it, and once on it, how to do well by our members. We think we should only enter abstracts of articles published in the journal, not the article itself, because we worry that the latter might result in losing our dues-paying members. After all, the Journal is supported by membership dues, and it is one of the major benefits of membership. The argument goes as follows: Why should anyone pay for the Journal when one can get it free through the electronic medium? Perhaps this is the challenge thrown at us by this increasingly popular medium of the future. Most members, 80% of those who responded to our informal Survey in Chicago, appear to be able to use E-Mail and have access to it.

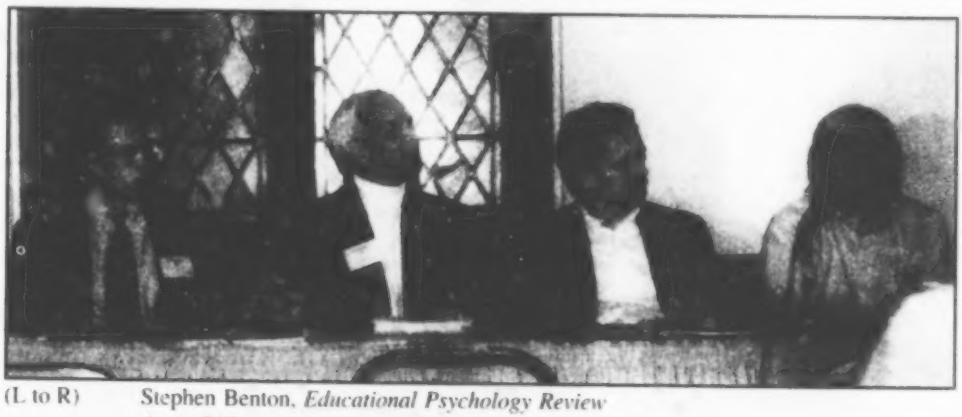
Greg Marchant has developed a GOPHER for MWERA which is currently operating at Ball State University. He indicates that abstracts can be placed here and that this might become an exchange medium featuring reactions to the research presented therein. John Surber is working with Greg to develop this idea further. But we could use help from others able and willing to push us up this path. Several years ago, Jean Pierce developed a LISTSERVER for MWERA, which has now become a national system for AERA and its divisions, currently operated by Gene Glass at Arizona State University.

We solicit your advice on these and other Journal matters. Selected letters to the Editor may be published in this Journal.

Images of the Conference...

(Photography by John Surber, University of Wisconsin - Milwaukee)

Meet the Editors.....



(L to R) Stephen Benton, *Educational Psychology Review*
Ayres D'Costa, *Mid-Western Educational Researcher*
Frank Lester, *Journal of Research in Mathematics Education*
Bill Reese, *History of Education Quarterly*
Lyn Corno, *American Educational Research Journal* (not seen)
Gene V. Glass, *Review of Educational Research* (not seen)
Randall Schumacker, *Structural Equation Modelling : A multidisciplinary journal* (not seen)

Incoming Vice-President, Sharon McNeely
Northeastern Illinois University

1994 Program Chair, Greg Marchant
Ball State University

President Elect,Thomas Andre
Iowa State University

Terri Strand
MWERA Historian

....and some of the Speakers.

Jesus Garcia
"Increasing minority faculty representation", Invited Panel

Gene V. Glass
"Papyrophiles v. Cybernauts", Invited Address

Robert E. Slavin
"Success for All", Luncheon Speaker

Sandra Hollingsworth
"Problem of gender in teacher education", Invited Session

Lyn Corno
"Working toward foresight and follow-through", Keynote Address

Charles C. Anderson, Jr.

MWERA's retiring Executive Officer

"Andy"'s link with MWERA dates back to its very roots, and then some. "Andy" was an administrator for the midwestern region of ETS on May 12, 1978 when he met with a group of about 50 educators at Indian Lakes (Bloomingdale, IL) for what is now known as MWERA's Founding/Charter meeting. These educators wanted more of what the Northern Illinois Association for Educational Research, Evaluation and Development was giving them. They wanted a broader regional association covering all midwestern states. So they obtained 244 signatures, wrote up a non-profit organization charter, and MWERA was born.

In 1979, Charles ran for the MWERA Association Council office and was duly elected. The following year he became the Treasurer for the newly founded organization. He told me that he "inherited" some $700 and a fistful of bills that had to be paid. Today, thanks to his watch, our balance is close to $20,000.

While all the other officers were elected for fixed terms, Charles was continued in office as Treasurer by every incoming Board without the formalities of elections. This practice continued until 1988, when someone pointed out that all MWERA officers had to be duly elected by membership. The Association's leadership kept in mind what was good for the organization. Rather than risk losing our "trusty custodian of the exchequer" in an election, we decided to change our Bylaws. Charles would become an appointed Executive Officer with a three-year term of office. We even decided on a small honorarium to cover his phone bills (while in office I received phone calls quite regularly from "Andy").

Charles thus became the steadfast pillar supporting the MWERA organization. As some of us would tell each other, "Presidents come and Presidents go, but there is always "Andy" guarding our treasury". Charles diligently billed members for their annual dues, (he would curse the post office when he could not track his lost members), he scrutinized non-paying members and conference gate-crashers, and he was known to sigh aloud and comment on the "exorbitant" charges we officers presented to him for reimbursement.

MWERA was his child as it were, and he wanted the best for it. I know he negotiated hard to get us favorable rates at the Bismarck Hotel, including a diligent comparison of menu prices for the conference luncheon. Charles had a nifty formula for earning MWERA some money on the luncheon. We had to provide the hotel a firm figure for the conference luncheon meeting. Every conference registrant was required to pay for lunch, but not all would attend. So "Andy" figured that there was money to be made if he could figure out exactly how many would show up. Well, he discovered that the number of conference *pre-registrations* somehow approximated the number who showed up for the lunch. As President I tried to remind members that they had a free lunch to attend, and "Andy" would whisper to me: "I know you are trying to mess me up this year!". But he never really meant to object....he was just so darn anxious to protect MWERA, and so anxious to make his formula work. And it did, and continues to do so. As he would say to me: Why give away our members' hard-earned money to the hotel?

Charles made sure each year that the President and Past-President were housed at no cost (a MWERA perk designed to say thanks for servitude rendered) in the Hotel's best suite (The Regency), that the meeting-rooms were strictly set aside by the hotel staff for our conference use as needed, and that the myriads of other minute arrangements were taken care of. But Charles also believed in fairness to all parties. I remember getting a polite earful from him when as Program Chair I allowed a huge box of subs to be smuggled into the Cracker Barrel Social meeting. That was in violation of hotel policy. While Charles fought for MWERA needs with the hotel, he also insisted that we kept our side of the bargain relative to the hotel. Charles also made sure that the nice Presidential Receptions organized by Adria in the last several years were properly approved by hotel management.

(continued on p. 22)

CALL FOR PROPOSALS
MID-WESTERN EDUCATIONAL RESEARCH ASSOCIATION
1995 ANNUAL MEETING
CHICAGO, OCTOBER 11-14, 1995
DEADLINE FOR SUBMISSION: MAY 7, 1995

Submissions must be postmarked no later than May 7, 1995. No submissions will be accepted by FAX or email. Mail submissions to: Dr. Sharon McNeely, P.O. Box 34421, Chicago, IL 60634 USA. Phone: 312.794.2788. One submission per cover sheet. One submission per envelope. See details within this call.

The Seventeenth annual meeting of the Mid-Western Educational Research Association (MWERA) will feature a presentation by David Berliner, a presidential address by Thomas Andre, professional developmental workshops, graduate student workshops, school teacher and administrator workshops, professional publications exhibits, and a multitude of various presentations. Proposals may include, but are not limited to, symposia, papers, discussion groups, poster papers, and alternative format sessions.

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional educational researchers primarily from states and provinces located in the mid-western region of the United States and Canada. Membership is open to educational researchers, college students and educators engaged in any aspect of disseminating information.

MWERA is organized by Divisions. The DIVISIONS of MWERA include:

A. Administration: Concerned with research, theory, development, and improvement of practice in the organization and administration of education.
B. Curriculum and Studies: Concerned with curriculum and instructional practice, theory, and research.
C. Learning and Cognition: Concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors.
D. Measurement and Research: Concerned with measurement, statistical methods, and research design applied to educational research.
E. Counseling, Human Development and Special Education: Concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies.
F. History and Philosophy of Education: Concerned with the findings and methodologies of historical research in education.
G. Social Context of Education and Motivation: Concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development, especially multicultural perspectives.
H. School and Program Evaluation: Concerned with research and evaluation to improve school practice, including program planning and implementation.
I. Professional and Medical: Concerned with educational practice, research, and evaluation in the professions (e.g. medicine, nursing, public health, business, law, and engineering).
J. Postsecondary Education: Concerned with a broad range of issues related to two-year, four-year, and graduate education.
K. Teaching and Teacher Education: Concerned with theory, practice, and research related to teaching at all levels and in-service and pre-service teacher education.

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GENERAL INFORMATION:

1. All persons attending the Annual Meeting, including participants and presenters are required to register for this meeting and join MWERA prior to the start of this program. All sessions listed in the program will be open to anyone registered for the meeting. A small fee will be charged, and enrollment may be limited for some workshops. Materials for registering for the Annual Meeting will be published in the *Mid-Western Educational Researcher*.
2. MWERA strives to make the meeting accessible to all individuals. Presentations must be made in the English language. Presenters are expected to act in a professional and ethical manner.
3. All presenters are expected to have a written paper available two weeks prior to the Annual Meeting for the Session Chair and Discussant (if applicable) to review. Presenters at paper and symposia sessions must distribute handouts related to their presentation to attendees at their sessions. ERIC registration forms will be available at the meeting for presenters wishing to submit to this system. This does not preclude formal publication in a journal.
4. MWERA will attempt to have overhead p ojectors available for use by presenters. Presenters who need other audio-visual equipment will have to provide their own equipment at their own expense.
5. MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals. Unless expressly prohibited in writing by the author(s), summaries may also be made available to the press or other interested parties upon request. Such limited distribution does not preclude subsequent publication of a summary or complete paper by the author(s).
6. By submitting a proposal, the presenting author assumes responsibility to appear at the Annual Meeting to present the paper. If circumstances arise which preclude the author presenting, it is his/her responsibility to arrange for a suitable substitute to make the presentation and to notify the Program Chair: Dr. Sharon McNeely at 312.794.2788.

GUIDELINES FOR SUBMISSIONS:

1. Only Proposals not previously presented or published are eligible.
2. Proposals will be peer-reviewed. To faciliate review and program placement, the proposal cover sheet must be included. The proposal should be categorized into one of the following categories:

A. Oral Presentation: 15-minute format before an audience. Any proposal submitted in this category may be allocated to a poster session at the discretion of the Program Committee.

B. Poster Session: The presenter prepares materials for easy viewing and reviewing by audience. These materials are posted on corkboard or poster board. The presenter interacts one-on-one and in small groups.

C. Symposium: A symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. Symposia should provide presentation of diverse opinions, interpretations, and suggest alternative ways of thinking about a problem. The organizer is expected to suggest topics and solicit speakers and discussants, and to notify participants of acceptance or rejection once so notified by the Program Chair.

D. Discussion Group: This is intended to provide an opportunity for people to participate in the discussion of a set topic. The organizer is expected to suggest the topic, prepare materials, and act as a moderator.

E. Workshop: A session of 1 and 1/2 or 3 hours, which helps the professional development of MWERA members. Presenters may receive an honorarium based on the number of participants attending the workshop. Workshops will occur both prior to and during the conference.

F. Alternative Format Session: The presenter may suggest a different type of session. Detailed information should be included.

3. Each proposal will be blindly peer-reviewed by members of the Division to which the proposal is submitted. No proposal should be made to more than one Division. No more than three proposals will be considered from any one author.
4. The Program Committee will group proposals into sessions, organized by topics of interest to the conference. A discussant may be included to discuss the overall themes and issues related to a session.
5. MWERA/WERA presents up to 3 student research incentive awards at the MWERA Business Meeting. Any graduate student who has authored/co-authored a research paper, is pre-registered for the 1995 Annual meeting, and is present at the MWERA Business Meeting will qualify for an award. Receipients will be selected by a random drawing at the Business Meeting. No application procedure is required.
6. Each Proposal must include the following:

- Three copies of one completed Presentation Proposal Cover Sheet;
- Six copies of a Summary. The summary should be a maximum of 3 typed, single-spaced pages. The Summary will be used in judging the merits of the proposal. It should include the Title, Objectives, Perspectives and/or Methods, Data Source (as appropriate), Results, Conclusions, and/or Point of View.
- Three copies of a 200 word Abstract. The abstract should be typed, single spaced, and prepared for publication in the Annual Meeting Abstracts.Do not use abbreviations in the text of the Abstract. Abstracts longer than 200 words will not be published.
- One additional copy of the Abstract. This copy should show the title and names of the author(s) and the affiliated institution(s) typed at the top left margin of the page.
- Three self-adddressed, stamped business-size envelopes. These will be used to inform you of (1) the receipt of the proposal, (2) the reviewers' decision, and (3) the scheduled session time.
- Three copies of a sheet of paper with the following information, typed: title of the proposal, a list of all authors, institutional affiliation(s), complete address(es), telephone number(s), email address(es).

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PRESENTATION PROPOSAL COVER SHEET
1995 MWERA ANNUAL MEETING
October 11-14, 1995, Chicago

Complete this form. Include three copies with your submission.

1. Type of presentation:
   - ____Paper: 15 minutes
   - ____Symposia
   - ____Workshop: 90 minutes
   - ____Alternative session: _____
   - ____Poster
   - ____Discussion Group
   - ____Workshop: 3 hours

2. Primary Division for peer-review: _____

3. Title of presentation: _____

4. Name of Principal Presenter/Organizer: _____
   _____ Degree: _____
   Affiliation _____

5. Co-authors, Symposia members, etc. _____

6. Have you ever presented a similar paper at another professional meeting?
   ____No ____Yes If so, how will this differ? _____

7. Is this a student presentation? ____No ____Yes

8. Are you a MWERA member? ____No ____Yes
   Please note that all presenters must be current members of MWERA at the time of presentation and must pay registration for the Annual Meeting.

9. Permission is given to MWERA to record my/our presentation and to make it available for sale for the benefit of MWERA. Initial here is you wish to **withhold** this permission. _____

I hereby certify that if this proposal is accepted and placed on the Annual Meeting Program, I will join MWERA, register for the Annual Meeting, appear, and deliver the presentation. If I am unable to attend, I will make arrangements for the presentation to be made on my behalf.

Signature: _____ Date: _____

Mail this no later than May 7, 1995, to: Sharon McNeely, Ph.D., MWERA Program Chair, P.O. Box 34421, Chicago, IL 60634

Checklist: Did you enclose:
- ____3 copies of this proposal cover sheet
- ____6 copies of the summary
- ____3 copies of the abstract
- ____1 copy of abstract with author information
- ____3 self-addressed, stamped envelopes
- ____3 author information sheets

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(Anderson, contd.)

I remember one night receiving a phone call from "Andy" after I had returned home from a conference. He came immediately to the point: " Did you pay your conference registration fee this year?", he asked. I thought I had. Several weeks before, I had written a check and given it to my secretary to mail to "Andy". Moreover, when I went to the registration desk, my name tag and conference packet were there for me as usual as though I had pre-registered. So I did not think twice about any problem I might have caused "Andy". Apparently my check had never reached "Andy", but he knew that as past-president I'd be there, and he did not want to embarrass me at the registration desk.

We are going to miss "Andy" guarding the treasury for us, but I am sure he will be there, solicitous as ever, asking the right questions even if he has to do this from his easy-chair at home. I know our MWERA members join me in wishing "Andy" a long, happy and healthy retirement from his Executive Officer job with us. It was fitting that the Association honored him in a special manner at our conference luncheon, and also voted unanimously to name the Graduate Student Scholarship fund after him. Charles C. Anderson Jr. made it possible for us to have the funds to be able to help our graduate students. Thank you, "Andy" for a job well-done!

Ayres D'Costa
Past President and MWER Editor

MWERA Reception at AERA

As usual, MWERA will host a Reception for its members attending the 1995 Annual AERA/NCME Conference in San Francisco. Jack Snowman, our Member-at-large, has asked for a hotel reservation, but does not have a confirmation as of this date. We expect the Reception to be held either on Tuesday, April 18 or Wednesday, April 19, from 6:30 to 8:30 p.m. Please check your AERA PROGRAM for specific information.

Do come and bring an AERA/NCME colleague or two with you. You could help MWERA by giving a complimentary copy of our Journal to selected colleagues who might join us and become potential authors. Copies of the Spring' 95 Issue and of our CALL FOR PAPERS will be available from MWERA Officers attending the conference.

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional education researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also, education researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1995 dues of $10 for student and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to:* Jean W. Pierce, Dept. EPCSE, Northern Illinois University, DeKalb, IL 60115, phone: 815-753-8470.

MWERA Membership Application

Name (first, middle initial, last)

Mailing address

City State Zip

Home phone ( ) Office phone ( )

Highest degree: Area of specialization:

Institution/Employer:

MWERA division preferences:

E-mail address:

AERA member? Division(s):

If applying for student membership, please include a copy of your student ID.

Going Beyond the Literature Review with Meta-analysis

Keith McNeil, New Mexico State University
Isadore Newman,The University of Akron

Abstract

Meta-analysis is a procedure that transforms research results into a common metric--called the effect size. This effect size can be aggregated if consistent across studies. If the effect size is not consistent, study characteristics can be used to ascertain why the effects are not consistent. The focus of this paper is on encouraging linear, curvilinear, and interactive investigations of the relationship between study characteristics and effect size.

In a previous paper (McNeil & Newman, 1994), we reviewed how one can obtain an Effect Size in order to aggregate the results of several similar studies. (See Glass, McGaw, & Smith, 1981; Light & Pillemer, 1984; and Rosenthal, 1984 for more details.) If the Effect Sizes are fairly similar, they can be aggregated to produce an average effect size. In many instances, Effect Sizes will vary. These discrepant results may be due to problems with internal validity, problems with external validity, or to random errors. We present a number of situations in which the researcher can uncover the reasons for the discrepant results. We rely on the General Linear Model to do the detective work to uncover the reason(s), because of its wide applicability.

Similarly labeled treatments or participants may differ in important ways

Although a researcher may refer to a set of treatments as similar, the researcher may find that the treatments differ in terms of some attribute, as depicted by Class Size in Table 1. Although the total mean Effect Size in Table 1 is .418, one could easily test the difference between the small Class Size studies (mean of .488) and the large Class Size studies (mean of .348), producing a *t* value of 1.85 with an associated directional probability of .051. These results (given an alpha of .05) would not lead the researcher to conclude that the treatment (however defined and however tested) is more effective with small classes than with large classes.

The above test could be accomplished with a *t*-test of the difference between two independent means, or with the comparison of two regression models. The research hypothesis in this case is: "Small classes produce larger Effect Sizes than do larger classes." The criterion is Effect Size, and the information known about the subjects is whether the results come from large classes or small classes. Therefore the Full Model, containing the full amount of information, is: Effect Size = a*U + b*S/L + E1 (where S/L = 1, if small Class Size, 0 if large Class Size).

Since this is a directional research hypothesis, we want the weighting coefficient to be greater than 0, which means that the restriction on the Full Model is: b = 0, resulting in the following Restricted Model: Effect Size = a*U + E2. The R^2 of the Full Model (itself an effect size of large versus small class size) is .30. When compared to the R^2 of 0.00 of the Restricted Model, this results in a p value of .051, the same as that for the *t*-test. (See McNeil, Kelly, & McNeil, 1975 or McNeil, Newman, & Kelly, *in press*, for extended discussion of testing research hypotheses with the General Linear Model.) Using an alpha of .05, we would not have obtained significance.

Table 1

A meta-analysis investigating class size differences in effect size

Study	Δ	Class Size	Small (S) or Large (L) Class Size
1	.35	36	L
2	.45	25	S
3	.60	15	S
4	.40	30	S
5	.70	8	S
6	.30	40	L
7	.31	45	L
8	.29	35	S
9	.40	40	L
10	.38	43	L

Mean Effect for all studies: = .418
Mean Effect for studies with large classes: = .348
Mean Effect for studies with small classes: = .488

One also could look at Class Size as a continuous variable rather than as an artificially dichotomized variable. The data in Table 1 have been plotted in Figure 1, treating Class Size as a continuous variable. The linear correlation between Class Size and Effect Size yields a correlation of .91 and an R^2 of .83. While the difference in Effect Size between large and small classes was not significant, the correlation between Class Size and Effect Size is significant.

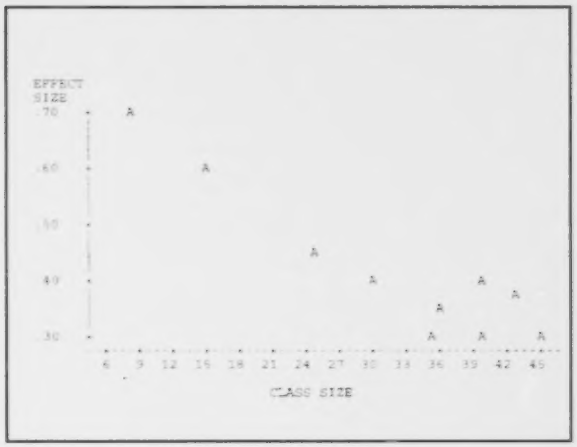

Figure 1. Relationship between Class Size as a continuous variable and Effect Size. Fictitious data from Tables 1 and 3.

The above correlation can be obtained and tested for significance with GLM. The research hypothesis is: "There is a negative linear relationship between Class Size and Effect Size," resulting in the following Full Model: Effect Size = a*U + b*Class Size + E1 (where Class Size is a continuous variable). Since there is expected to be a negative relationship, the expectation is that the weight, b, is less than 0, resulting in the restriction on the Full Model of b=0. When the restriction is placed on the Full Model, the following Restricted Model obtains: Effect Size = a*U + E2. Comparing the two models results in a p value of .0002, less than the *a priori* alpha of .05. Thus there is a significant negative relationship between Class Size and Effect Size.

Early discussions of effect size focused on differences between groups and linear relationships. Rosenthal (1980) and Light and Pillemer (1984) emphasized plotting the data to look for non-linear and interacting relationships in the data. The advantage of the General Linear Model is that non-linear and interactive relationships can easily be tested empirically. Inspection of Figure 1 supports the investigation of a second-degree curve.

The above assertions were based on the testing of the following research hypothesis: "There is a second-degree relationship between Class Size and Effect Size, over and above the linear fit." In order to allow for a second-degree curve, a second-degree component of Class Size must be added to the previous straight-line model, resulting in the Full Model: Effect Size = a*U + b*Class Size + c*Class Size^2 + E3, where Class Size^2 is simply the squared value of Class Size. Since the research hypothesis specifies a non-directional second-degree relationship, the expectation is that the weight for the second-degree component be not equal to 0, resulting in the restriction that the weight is equal to 0. If the weight, c, is forced to be equal to 0, the Full Model becomes the following Restricted Model: Effect Size = a*U + b*Class Size + E4. Comparing the R^2 of the two models (.91 and .83) results in a p value of .036, indicating a significant second-degree relationship.

Treatments may be more or less effective depending upon who the subjects are, the setting in which the treatment occurs, or other situational variables

An aptitude-by-treatment interaction is often common in educational research, and can provide valuable insight to a discipline (Cronbach & Snow, 1977; Tobias, 1976). One should not expect a given treatment to work equally well for all types of subjects. Therefore, one should not aggregate results from studies that produce different results, as those in Table 2 do.

Table 2

A meta-analysis identifying class size differences interacting with major on effect size

Study	Δ	Class Size	Major (M) or Non-major (N)
1	.10	5	N
2	.10	10	N
3	.10	15	N
4	.20	20	N
5	.30	30	N
6	.50	50	N
7	.75	75	N
8	.80	80	N
9	.80	20	M
10	.75	25	M
11	.50	50	M
12	.70	30	M
13	.25	75	M
14	.20	80	M
15	.15	80	M
16	.25	80	M

Mean Effect for all studies: = .403
Mean Effect for studies with majors: = .450
Mean Effect for studies with non-majors: = .356

Testing the research hypothesis: "Majors produce a larger Effect Size than do Non-Majors" would require the same analysis as in Table 1. The Full Model would be: Effect Size = a*U + b*M/M + E1 (where M/M = 1 if Major, 0 if Non-major). The Restricted Model would be: Effect Size = a*U + E2. The R^2 of the Full Model is .03, resulting in a p value of .5158--no significant difference between major and non-major.

It may be that the apparent inconsistency in results is due to the nature of the treatment (instruction). While there is no overall difference between Majors and Non-majors, the results are clearer when the interaction between whether the course is restricted to Majors and Size of the classroom is considered, as indicated in Figure 2. Why this is the case is not known at this time, but one possibility is that learning requires some content literacy, and content

literacy is facilitated by small classes and debilitated by large classes. This finding would help the researcher in identifying a moderator variable which could be tested in future research.

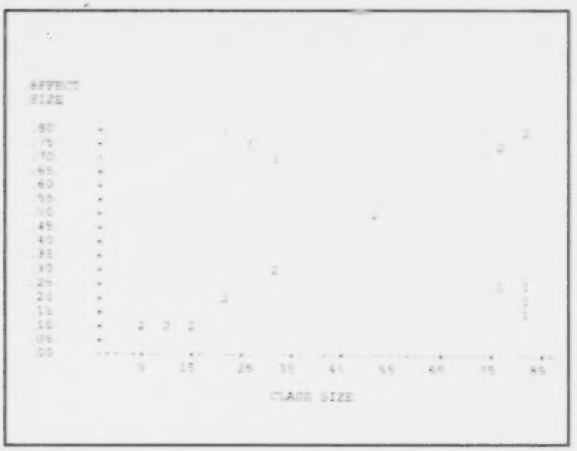

Figure 2. Relationship between Class Size as a continuous variable and Effect Size for Majors (1) and Non-majors (2), using Fictitious data from Table 2.

The above discussion relates to testing the research hypothesis: "There is an interaction between Class Size and Major/Non-major in the prediction of Effect Size." The Full Model needed to reflect all the information in the research hypothesis is: Effect Size = a*U + b*Class Size + c*M/M + d*(Class Size*M/M) + E1 (where Class Size*M/M is simply the product of Class Size and M/M). If there is the expected interaction, then the weight, d, will be non-zero. If there is no interaction, then the weight, d, will be zero, resulting in the Restricted Model: Effect Size = a*U + b*Class Size + c*M/M + E2. The R^2 of the Full Model is .99, while the R^2 of the Restricted Model is .03. The ***F***-test of these two models results in a p value of .0001, and since this value is less than our alpha of .05, we can conclude that there is an interaction between Class Size and Major/Non-major.

The type of research design employed in a study can strongly influence the outcome

Different results can occur as a function of how the researcher designed the study. For instance, studies in most research areas document that Volunteers react differently than Non-volunteers. Rosenthal and Rosnow (1975) reviewed the research on the differences between Volunteers and Non-volunteers. Some of the differences are that Volunteers tend to (a) be better educated, (b) have higher social class, (c) be more intelligent, and (d) have a higher need for social approval. Suppose that the studies in Table 1 were conducted with college sophomores, half were conducted with Volunteers while the other half were conducted with Non-volunteers (Non-volunteer subjects were randomly assigned to experimental groups as part of their course requirements), as indicated in Table 3.

Table 3

A meta-analysis identifying volunteer differences in Effect Size

Study	A	Class Size	Volunuteer (V) or Non-Volunteer (N)
1	.35	36	N
2	.45	25	V
3	.60	15	V
4	.40	30	V
5	.70	8	V
6	.30	40	N
7	.31	45	N
8	.29	35	N
9	.40	40	V
10	.38	43	N

Mean Effect for all studies: = .418
Mean Effect for studies with non-volunteers: = .326
Mean Effect for studies with volunteers: = .510

Now the apparent consistency in the results is due to whether the subjects volunteered for the study. Indeed, the Volunteer Effect is (.510 - .326) = .184. Why this is so can only be conjectured at this time, although there is much in the research design literature about demand characteristics. Volunteers usually want the researcher to succeed, are extremely willing to do whatever requested, try to figure out what the researcher wants to do, attend to cues diligently, etc.

The research hypothesis tested here would be of the same structure as the ones in Table 1 and Table 2: "Volunteers produce a larger Effect Size than do Non-volunteers." This research hypothesis results in the following Full Model: Effect Size = a*U + b*V/NV + E1. Since this is a directional Research Hypothesis, we want b to be greater than 0. The Full Model R^2 is .51, and the Restricted Model R^2 is 0.00, resulting in a p value of .018. For these fabricated data, Volunteers produce a larger effect size than do Non-volunteers.

The particular analysis procedure that is used may be related to outcomes

One of the continuing concerns is the unit of analysis problem. For instance, should an educational researcher use the individual subject as the unit of analysis, or should the classroom mean be used as the unit of analysis? If the teacher effect is potent, then using the classroom as the unit of analysis makes sense since all of those students in the one classroom were taught by the same teacher. If the treatment and dependent variable can be influenced by the entire school--a school effect--then it makes sense to use the school as the unit of analysis. Which level a researcher uses can influence heavily the magnitude of Effect Size. Pillemer and Light (1980) stated that the more highly aggregated the unit of analysis, the stronger the relationship will be.

Proposed solution when several results from one study are analyzed

One study might contribute more than one Effect Size in any one meta-analysis. This could occur if multiple dependent variables were used, if multiple populations were investigated, or if multiple treatments or multiple comparison groups were used. In these cases, the unique aspects of the study impinge, to some extent, on each of the Effect Sizes collected from that one study. To avoid the problems of non-independent data, one can extend the analysis of repeated measures to such study-results (Tracz, Newman, & McNeil, 1986).

Suppose the 10 Effect Sizes in Table 3 actually came from six different studies. The analysis would need to take into consideration the fact that there is non-independence in the data--some of the studies supplied more than one Effect Size. The proposed solution is to include "study vectors," analogous to "person vectors" in repeated measures analysis. The study vectors are presented in Table 4. The research hypothesis tested is "Small classes produce larger Effect Sizes than do Larger classes, over and above the individual differences due to each study." The Full Model would need to have not only information about size of class (S/L), but also which of the six studies the results were from (S1, S2, etc.). We thus have as the Full Model: Effect Size = a*U + b*S/L + c*S1 + d*S2 + e*S3 + f*S6 + g*S8 + h*S9 + E1 (where S1 = 1 if Effect Size is from study 1, 0 otherwise, etc.). If there is no difference between large and small Class Sizes (over and above study differences), then the weight, b, will be equal to 0, resulting in the Restricted Model: Effect Size = a*U + c*S1 + d*S2 + e*S3 + f*S6 + g*S8 + h*S9 + E2. The R^2 of the Full Model is .71 and the R^2 of the Restricted Model is .67, resulting in a p value of .4929--small classes do not produce larger Effect Sizes than do Larger classes, over and above study differences.

Table 4

A meta-analysis investigating class size differences in effect size, considering multiple results from several studies

Study	Δ	Small (S) Large (L)	S1	S2	S3	S6	S8	S9
1	.35	L	1	0	0	0	0	0
2	.45	S	0	1	0	0	0	0
3	.60	S	0	0	1	0	0	0
3	.40	S	0	0	1	0	0	0
3	.70	S	0	0	1	0	0	0
6	.30	L	0	0	0	1	0	0
6	.31	L	0	0	0	1	0	0
8	.29	S	0	0	0	0	1	0
9	.40	L	0	0	0	0	0	1
9	.38	L	0	0	0	0	0	1

Mean Effect for all studies: = .418
Mean Effect for studies with large classes: = .348
Mean Effect for studies with small classes: = .488

Summary

Since the study characteristic is constant for any one study, none of the original researchers could have tested any of the research hypotheses discussed in this paper. Analyzing Effect Size facilitates the explanation for why different Effect Sizes are obtained from different studies. Such information is invaluable for understanding and extending the knowledge base in any field.

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Factors Underlying Effective College Teaching: What Students Tell Us

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Abstract

The researchers analyzed 28,000 student evaluations of faculty across 46 departments for one academic term. A 27-item instrument on which students rated faculty was used. One global item assessing overall instructor effectiveness was predicted most strongly by three items: namely, students' perception that the instructor was prepared, presented subject matter clearly, and was interesting. The predictors of students' perceiving that they "learned a lot" were the ratings on three items: the instructor was interesting, the course met the objectives, and the instructor was well-prepared. Being prepared and being interesting seem to be critical characteristics for university faculty in the classroom.

Other than the routine reports for individual professors there had never been a systematic study of the student evaluations of faculty at our institution. We decided to examine the aggregate of evaluations for one semester in ways that could reveal the underlying dimensions of student ratings. This became our first line of inquiry. Results would add to faculty's understanding of the validity of a measuring tool that has been used for many years, and one that impacts seriously on their pay and promotion. A common administrative use of only one item ("Overall rating of the instructor"), to the exclusion of 26 other items on which data were routinely collected, posed a second intriguing question for us; namely, Which of the other items weighted most heavily in predicting the rating of "Overall effectiveness" of the instructor? And, thirdly, Which of the items were the most important predictors of students' reporting that they "learned a lot?"

Research on student evaluation of faculty seems to adopt one of two perspectives: either teaching effectiveness can be assessed globally, using a single overall measure; or teaching is multidimensional and assessment must address many individual dimensions (Blatt & Benz, 1993;Ryan, Harrison, & Zia, 1993). Ryan and colleagues conducted an extensive review of published studies and found a lack of research that examined individual teaching behaviors that relate to a one-item global evaluation. While a void exists for that particular type of study, the field in general is well-researched. Marsh and Bailey (1993) report that literally thousands of studies have been conducted and they concluded that the process itself seems supportable in assessing teaching effectiveness.

Procedures

At the conclusion of each term at the University of Dayton undergraduate students are asked to fill out a formal evaluation form in each course. In addition to demographic items (gender, year in school, GPA, whether the course is required or not, etc.) there are items that relate to quality of the instruction and the course. The students respond to the items anonymously on bubble-scan sheets which are collected by one member of the class and sent to the computer center. Results for each course are returned to each instructor from the computer center, via each department chair.

The data from student evaluations of the January-April 1992 term were aggregated and analyzed. Data from 46 departments, university-wide, were analyzed separately. All were then aggregated to form a data-set of approximately 28,800. There was one limitation in the design of the study: the analyses violated the assumption of independence of measures. There were not 28,800 separate student evaluations. A student would typically enroll in four or five courses, therefore, completing four or five evaluation forms at the end of the term. Because the students complete the evaluation forms anonymously there was no way to correct for non-independence of the data.

Results

Question #1: Underlying dimensions of the evaluation instrument

A factor analysis of the data was conducted to reveal the underlying structure of the evaluation instrument. A principal components solution with varimax rotation, with an eigenvalue cutoff of 1.00, was used. Selecting this type of factor analysis grew from the traditional notion of factor analysis as a way to map an unfamiliar terrain, as Rummel (1970) puts it, and our desire to reveal the clearest and simplest structure underlying faculty evaluation, i.e., uncorrelated factors.

A three-factor solution resulted and Table 1 reports the results. The first factor defines a dimension interpreted as "Instruction." Items originally designed to relate to both the instructor and the course loaded on this factor. This factor includes the global or "overall" items that call for assessing the course and assessing the instructor (items #7 and #8).

Factor Two was interpreted to be an "Affective" dimension. Four items addressing such issues as student's expressiveness, instructor's willingness to help, etc. loaded

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highly on this factor. The third factor, named "Materials", was interpreted as a dimension clearly related to materials and scheduling.

In sum, these results would suggest that the items on the evaluation instrument group around three dimensions: "Instruction", "Affect", and "Materials."

Question #2: Predictors of overall instructor rating

Item #8 states: "Everything considered, how would you rate this instructor?" This global evaluation item is the most important item for faculty concern. In some departments this item is the exclusive means of evaluation. We were interested in which specific teaching behaviors and attitudes related most strongly to it. In order to answer this question a regression analysis was done. The items categorized by the university as "instructor items" (#10 through #17) were used as predictor variables against the criterion of item #8: Overall instructor rating. These items accounted for .65 of the variance of the overall instructor perception; the regression weights appear on Table 2. Tentatively, the three items contributing most to the perceptions of the instructor were item 10 "The instructor was prepared well", item #12, "The subject matter was clearly presented...", and item #13 "The instructor put material across in an interesting way." The other teaching behavior and attitude items contributed little to the overall ratings of instructor compared to these three items.

Because regresssion weights are unstable from sample to sample and one can conclude little from just one data-set, a cross-validation study was done. The results supported the pattern of weights. We have confidence the three items are, in fact, significant characteristics related to overall instructor ratings.

Question #3: Predictors of students' perception of "having learned a lot?"

Item #9: "I learned a great deal from this course" is all but forgotten in faculty evaluations at this institution. Responses to this item seemed to us to be the most relevant one of all as far as our goals as faculty are concerned. A legitimate case could be made for the fact that students reporting a sense of having learned a lot is even more powerful effectiveness indicator than a global assessment item like #7 or #8. That a student may rate an instructor in a less than positive way "overall" is relatively unimportant, one might assert, compared to whether or not the student reported having learned.

This item, item #9, is not part of the "overall" ratings of course and instructor. It is never used in the typical departmental review of faculty.

In order to determine which items on the instrument were most predictive of students' having reported a feeling of learning a lot, all the items (#10 through #25) were regressed on item #9 as a criterion variable. Table 3 presents the results.

The 16 items accounted for .53 of the variance in the students' reported sense of learning. The most contributory items were #13: "The instructor put material across in an interesting way", item #19:"The course effectively met these objectives", and item #10: "The instructor was prepared well for classes."

Three items were negatively related to the criterion, #11: "The instructor spoke clearly and audibly", #16:"The instructor respected students as persons" #25:"Examinations and assignments were graded and returned within a reasonable time."

Cross-validation studies supported this pattern of importance among the variables.

Discussion

This study of student evaluations at our institution was born out of faculty self-interest; promotion and pay are strongly linked to the student evaluation system. We felt that to assist ourselves and our colleagues to become acquainted with the student evaluation process, we would examine the data generated from our own students for insights into the constructs being measured and how the global (or "overall") items relate to items on specific teacher behaviors and attitudes. In many departments, these "overall" items, #7 and #8, are used to the exclusion of all other items. Most frequently, as a matter of fact, only #8 is used. Additionally, we wanted to explore the relationships between the other items and item #9, the students' perception of having learned a lot.

We drew several conclusions from the data analysis and presented them to the faculty during an Inservice-Day shortly after the research was completed. Discussion begun during that meeting continued informally for several weeks after.

The conclusions are clear. First of all, students seem to be attending to behavioral factors rather than affective factors in their overall evaluation of faculty (item #8). This conclusion is warranted by our finding that the following items were predictive of overall instructor rating:

The instructor prepared well
The subject matter was clearly presented
The instructor put material across in an interesting way.

On the other hand, the items more reflective of "affect" were not strongly predictive of instructor ratings. Examples of these items are those that address "respect for students" and "fairness." This is particularly meaningful because departments often use only item #8 for personnel decisions. It may well be that being "nice" and supportive with students is not a sure pathway toward high teaching ratings. Students may be telling us "Be interesting and prepared; niceness won't cut it!"

Secondly, item #9: "I learned a lot" provided an interesting parallel to item #8. Our perception that this item is mostly ignored was confirmed when we discovered that a number of faculty had forgotten it was even on the form. The responses to this item may be more important than responses to item #8 where the instructor overall is rated. That students' perceptions about learning may be solid evidence of effective teaching. We found that students' feelings that

Table 1

Factor Analysis Results: Student Evaluation of Faculty Form
(Data from January 1992 term)

Item	Question	Instruction	Affective	Materials
7	Everything considered, how would you rate this course?	.74443		
8	Everthing considered, how would you rate this instructor?	.76032		
9	I learned a great deal from this course.	.73990		
10	The instructor prepared well for classes.	.70493		
11	The instructor spoke clearly and audibly.	.56769		
12	The subject matter was clearly presented by the instructor.	.75327		
13	The instructor put material across in an interesting way.	.71228		
14	Students were able to express themselves freely as a result of the instructor's openness to their ideas.		.76411	
15	The instructor was willing to help students who experienced difficulty in the course.		.73469	
16	The instructor respected students as persons.		.79901	
17	The instructor was fair in grading examinations and assignments.		.56227	
18	The goals and objectives of this course well defined.	.66159		
19	This course effectively met these objectives.	.70905		
20	This course was well coordinated and well organized.	.74749		
21	Supplemental course material, such as handouts, visual aids, bibliographies, etc., enriched this course.	.47011		
22	The textbook was an asset to this course.			.79282
23	Assignments were relevant to course content.			.63402
24	Examinations related well to the material emphasized in the course.			.55747
25	Examinations and assignments were graded and returned within a reasonable time to students.			.44881
	Eigenvalue	5.970	3.328	2.674
	Trace Variance	.31	.17	.14

{62% trace variance}

Table 2

Items #10 through #17 as Predictor Variables of Overall Rating of Instructor (#8)

Item	Question	partial regression weight	t	p>t
10	The instructor prepared well for classes.	.2110	36.35	.0001
		.2332 (1)	28.16 (1)	
		.1906 (2)	23.39 (2)	
11	The instructor spoke clearly and audibly.	.0256	4.51	.0001
		.0295 (1)	3.46 (1)	
		.0238 (2)	3.102 (2)	
12	The subject matter was clearly presented by the instructor.	.2267	41.01	.0001
		.2237 (1)	28.67 (1)	
		.2285 (2)	29.16 (2)	
13	The instructor put material across in an interesting way.	.2851	59.80	.0001
		.2781 (1)	41.85 (1)	
		.2913 (20)	42.52 (2)	
14	Students were able to express themselves freely as a result of the instructor's openness to their ideas.	.0389	7.218	.0001
		.0473 (1)	6.17 (1)	
		.0321 (2)	4.236 (2)	
15	The instructor was willing to help students who experienced difficulty in the course.	.0619	11.481	.0001
		.0612 (1)	8.04 (1)	
		.0643 (2)	8.387 (2)	
16	The instructor respected students as persons.	.0977	14.95	.0001
		.0859 (1)	9.301 (1)	
		.1080 (2)	11.66 (2)	
17	The instructor was fair in grading examinations and assignments.	.0982	20.743	.0001
		.1056 (1)	16.31 (1)	
		.0885 (2)	12.71 (2)	

Note: $R^2 = .6546$ df = 8/27734 R^2 cross validation = .6392

Table 3

All items (#10-#25) as predictor variables of students' perceptions of "learning a lot" (#9)

Item	Question	partial regression weight	t	t>p
10	The instructor prepared well for classes.	.1598	21.53	.0001
		.1721 (1)	15.87 (1)	
		.1489 (2)	14.63 (2)	
11	The instructor spoke clearly and audibly.	-.0347	-5.20	.0001
		-.0332 (1)	-3.27 (1)	
		-.0366 (2)	-4.112 (2)	
12	The subject matter was clearly presented by the instructor.	.0910	13.32	.0001
		.0712 (1)	7.31 (1)	
		.1115 (2)	11.62 (2)	
13	The instructor put material across in an interesting way.	.2150	37.62	
		.2400 (1)	29.67 (1)	
		.1898 (2)	23.47 (2)	
14	Students were able to express themselves freely as a result of the instructor's openness to their ideas.	.0058	0.92	.3575
		-.0121 (1)	-1.33 (1)	
		.0225 (2)	2.52 (2)	
15	The instructor was willing to help students who experienced difficulty in the course.	.0109	1.72	.0848
		-.0007 (1)	-.077 (1)	
		.0234 (2)	2.63 (2)	
16	The instructor respected students as persons.	-.0151	-1.98	.0472
		-.0169 (1)	-1.54 (1)	
		-.0117 (2)	-1.10 (2)	
17	The instructor was fair in grading examinations and assignments.	.0223	3.82	.0001
		.0281 (1)	3.49 (1)	
		.0145	1.71 (2)	
18	The goals and objectives of this course were well defined.	.0079	0.97	.3297
		-.0067 (1)	-0.56 (1)	
		.0213 (2)	1.88 (2)	
19	This course effectively met its objectives.	.2209	24.89	.0001
		.2218 (1)	16.84 (1)	
		.2184 (2)	18.17 (2)	
20	This course was well coordinated and well organized.	.0736	9.40	.0001
		.0850 (1)	7.53 (1)	
		.0612 (2)	5.63 (2)	
21	Supplemental course material, such as handouts, visual aids, bibliographies, etc., enriched this course.	.0574	11.05	.0001
		.0424 (1)	5.84 (1)	
		.0736 (2)	9.86 (2)	
22	The textbook was an asset to this course.	.0460	11.68	.0001
		.0412 (1)	7.52 (1)	
		.0499 (2)	8.76 (2)	
23	Assignments were relevant to course content.	.0517	7.98	.0001
		.0748 (1)	7.62 (1)	
		.0333 (2)	3.85 (2)	
24	Examinations related well to the material emphasized in the course.	.0488	8.35	.0001
		.0485 (1)	5.81 (1)	
		.0479 (2)	5.84 (2)	
25	Examinations and assignments were graded and returned within a reasonable time to students.	-.0328	-5.99	.0001
		-.0288 (1)	-3.73 (1)	
		-.0392 (2)	-5.00 (2)	

Note: R^2 = .5380 df = 16/25660 R^2 cross validation = .5385

the instructor prepared well
the instructor put material across in an interesting way
the course effectively met these objectives

were predictive of student's perception of "having learned." The first two of these behaviors are the same behaviors that predicted responses to item #8. Clearly, being interesting and having prepared are crucial for both being perceived as a good teacher and for students' feelings of learning.

Beyond the results reported here, it is interesting that we found no gender difference in the evaluation of faculty; however, female students rated faculty characteristics higher on all items than did male students. Whether the student viewed the course as required or not required made no significant difference in their responses to course evaluation. Surprisingly, the instructor rating/course rating, items #7 and #8, and the "amount student learned" item, #9, had higher means when the course was not required.

Finally, we return to our original interest - the underlying dimensions of what is being measured. The student evaluation form appears to be measuring "instruction", "affect", and "materials." The two "overall" ratings (#7 and #8) loaded heavily on the "instruction" factor. This suggests that administrators can use these items with confidence in assessing overall faculty proficiency in instruction. The underlying dimensions of "instruction" and "course" overlap, according to our factor analysis, evidence that in students' minds the two are inextricably linked. While this raises other questions, (Does subject matter preference bias student ratings?), it seems to confirm that what one perceives about the course is also likely to be what one perceives about the instructor.

The need for systematic institutional studies

Following discussion of these findings with faculty during In-Service day, findings were also printed in the campus newspaper. Feedback from faculty overwhelmingly supported this line of inquiry. They have asked for more study of the instrument and student responses, and also of the ways in which the results are used from department to department. Many professors raised issues of specific relevance; i.e., Is a universal form the best tool? For example, do laboratory courses and performance courses in the fine arts present a different set of dynamics for students to assess than classroom lecture courses? Some of these same faculty suggested an additional response option of "Does not apply." Some qualities queried on the form were considered irrelevant to some courses.

A few faculty spoke to a need for opportunity for faculty feedback to student evaluations. When or how do faculty have a voice in their use? Others were interested in whether or not students' evaluations were related to course grades they received. Some recommended open-ended response options for students. While some departments have added room for comments under each item, many faculty pressed for requiring students to write reasons why they gave the numerical rating that they did. The possible relationship between students' personal investment in the course to how they evaluate it was discussed. In other words, might there be value in asking students how many classes they missed and how much study-time they put in per week on the course material? Also, some asked for inclusion of items on gender-sensitive and ethnicity-sensitive language and attitudes on the part of faculty.

Finally, the order of items on the Student Evaluation Form has been questioned. The overall, global, assessment items are currently #7 and #8 and, as such, precede the items on specific teaching behaviors and attitudes. Whether or not this order encourages the appropriate response-set among students is a concern. In the past, these two global items were at the end of the list of all other items. The resulting dynamic of both strategies needs to be assessed, according to some faculty.

Our intent is to continue this research in a variety of ways. The immediate plan is to ask students to record the "meaning" of their numerical responses in a randomly selected set of classrooms. In other words, what does it mean to students to: "put material across in an interesting way?" Further policy studies of administrative use of the process are also planned. A more systematic study of faculty views is required. We plan to interview faculty, as well as students, to get more in-depth interpretations of this process. How do faculty relate to the process personally and professionally? What impact does it have or not have on their teaching?

At the present time a replication of this study as well as an examination of the communication competencies that correlate with these items currently underway. We strongly believe that continuing broad-based institutional examination of the process of student evaluation is absolutely essential for a positive climate of optimal teaching and learning at our university to flourish.

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MWER Feature: Research in Action
Computer-Based Education: More Hype Than Help?

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The current educational and psychological literature is replete with suggestions for improving the quality of both classroom instruction and student achievement with this or that technological innovation. A cursory survey of my library's most recent ERIC listings turned up the following: the use of a computer-based simulation by second-graders to "reconstruct" extinct or endangered animals from recyclable materials; the use of a supercomputer to create 3-dimensional images of scientific concepts in high school chemistry and physics classes; the use of an information network by Florida schoolchildren to exchange electronic mail, conduct online conferences, and access various databases; the use of computerized speech and graphics to help poor readers improve their decoding and comprehension skills; the use of a computerized spelling program designed to improve children's spelling and phonological skills; and the use of a CD-ROM to develop students' listening skills.

Needless to say, most of the people who write about technology in the classroom are anywhere from moderately to wildly enthusiastic about its prospects for improving the quality of teaching and learning. Although B. F. Skinner (1986) was referring to the teaching machines of the 1960s when he said that students who were taught with such devices could learn twice as much in the same time and with the same effort as students taught conventionally (*Phi Delta Kappan*, volume 68, number 2), he left no doubt that he felt the same way about the potential of today's computer-based technologies (provided, of course, that the software is designed around basic operant conditioning principles).

While it is fine to be enthusiastic about ideas and products that may improve classroom instruction and achievement, at some point we need to turn to the empirical literature to get some idea of how well the innovation fulfills the claims that have been made for it. One problem with trying to gauge the effectiveness of such new technologies as telecomputing, CD-ROM, interactive compact disks (CD-I), and hypermedia is the lack of a broad research base. But the research literature on computer-based education (CBE), which involves using the computer to teach students new information and skills as well as to help the teacher manage various aspects of instruction, is more extensive owing to its longer history. Consequently, we can draw some general conclusions about the effectiveness of CAI by looking at a few of the meta-analyses that have been published since 1980.

For those readers who have only a passing familiarity with meta-analysis, it is a quantitative method of reviewing literature whose primary statistic is the effect size (ES). Basically, an ES indicates how far apart in standard deviation units the average student in a treatment group is from the average student in a control group. So, an ES of .25 indicates that the average student in the treatment group scored one-fourth of a standard deviation higher than the average student in the control group on the outcome measure that was used.

The Effect of CBE on Elementary School Students' Achievement

In volume 1 of *Computers in Human Behavior* (1985), James Kulik, Chen-Lin Kulik and Robert Bangert-Drowns describe the results of a meta-analysis of 32 studies that met four basic criteria: (a) Each study had to take place in an actual first- through sixth-grade classroom. (b) Each study had to provide quantitative results from both a computer-taught class and a conventionally instructed class. (c) Each study had to be free of such major methodological flaws as substantial differences in aptitude of treatment and control groups, unfair teaching of the criterion test to one of the comparison groups, and differential rates of attrition from the treatment and control groups. (d) Each study had to be obtainable from library holdings and data-bases like ERIC.

Twenty-eight of the studies represented one of two varieties of computer-assisted instruction (CAI). The computer was used to either help students consolidate recently acquired skills through drill-and-practice exercises or to teach new knowledge and skills through tutorials. In the remaining four studies, the computer was used to evaluate student performance, guide students to appropriate instructional resources, and keep records of student progress. This latter type of use is typically referred to as computer-managed instruction (CMI).

For the four CMI studies, the average ES for achievement was a trivial .07. Thus, using the computer in the manner described above conferred almost no advantage on those students in comparison to conventionally taught students.

By contrast, the average ES for achievement for the CAI studies was .47. This means that the typical student in the CAI classes scored at the 68th percentile whereas the typical student in the conventionally taught classes scored at the 50th percentile. Another way of saying the same thing is that 68 percent of the students from the CAI classes outscored the average student from the control classes. Regardless of how you look at it, this represents a positive effect for CAI that the Kuliks characterize as moderate. But what makes this effect more impressive is that it was obtained with a relatively modest input. On average, students received only 26 hours of CAI over a 26-week span. If you break that down into equal segments, it works out to 12 minutes per school-day.

Five studies examined the effect of CAI on both high- and low-aptitude students. Although the achievement test scores of the low-aptitude students increased by .41 standard deviations versus .08 standard deviations for the high-aptitude students, this difference was not statistically significant.

For the five studies that administered retention tests, the CAI-taught students scored slightly higher. The average ES was .27.

Finally, only one study examined changes in attitude toward the subject (math). The ES of .10 indicated essentially no change in attitude.

The Effect of CBE on Secondary School Students' Achievement

A meta-analysis of CAI effects among junior and senior high school students was conducted by Robert Bangert-Drowns, James Kulik, and Chen-Lin Kulik (1985) and published in volume 12, number 3 of the *Journal of Computer-Based Instruction*. The authors located 42 studies that met the same criteria as those mentioned above, and that assessed the effects of CAI, CMI, and something called computer-enriched instruction (CEI). In the 17 CAI studies, the computer was used either for drill-and-practice or tutorial purposes. In the 16 CMI studies, the computer evaluated student performance, guided students to appropriate instructional resources, and kept records of student progress. In the 9 CEI studies, the computer either generated data at the student's request or ran programs developed by the student (as in LOGO). The average ES for achievement (measured either with locally constructed or standardized tests) for all 42 studies was .26. Thus, the typical student in a computer-based class scored at the 60th percentile while the typical student in a conventionally taught class scored at the 50th percentile. An effect of this size would typically be characterized as small.

Because the individual effect sizes ranged from -.60 to 1.44, various study features (e.g., duration of instruction, assignment of subjects to treatments, course content) were examined to try to account for this variability. Of the 15 features examined, only three -- type of computer use, year of publication, and ability level of the students -- were significantly related to variability in achievement. As noted above, the computer was used either to assist instruction, manage instruction, or enrich instruction. Small effect sizes were found when the computer was used to assist or manage instruction (.36 and .40, respectively). But when the computer was used to enrich instruction, the effect size was a negligible .07. For studies published prior to 1975, the average ES was .12, a negligible effect. But for studies published between 1975 and 1984, the average ES was an almost moderate .45. At first blush, this finding may seem inexplicable. But Bangert-Drowns et al. offer the reasonable speculation that the effect is attributable to improvements in the quality of programs and to teachers learning how to more appropriately use computer-based technology. Finally, effect sizes varied significantly as a result of student ability level. The effect of computer-based instruction on low ability students approached the moderate level (average ES = .46), was negligible for mixed ability groups (average ES = .13), and was weak for high ability students (average ES = .24). This type of finding, by the way, is not terribly unusual. Structured educational programs typically benefit low ability students more than average or high ability students because they provide such students with the knowledge and skills they lack.

Although achievement was the only outcome assessed by most of the studies,a few looked at such other outcomes as attitudes towards computers, quality of instruction, attitudes toward subject, and class attendance. For the four studies that measured attitudes towards computers, the average ES was a moderate .62. For the two studies that had students rate the quality of instruction they received, the average ES was a small .24. For the 11 studies that examined student attitudes towards the subject matter, the average ES was a negligible .09. For the four studies that looked at attendance, the average ES was also a negligible .10. Because of the relatively small number of studies on which these effects are based, one should be careful about drawing conclusions about the effect of computer-based education on other-than-achievement outcomes. With that caveat in mind, I would characterize these findings as reflecting a sort of "good news - bad news" story. On the one hand, students see computer-based learning as being of higher quality than conventional instruction and walk away from a computer-based learning experience feeling considerably more positive about the computer as a learning tool. On the other hand, attitudes towards the subject are not markedly different from the attitudes expressed by students taught conventionally and student cut both types of classes about equally often. Apparently, if students don't like a subject, the format in which it is presented is not likely to make a major difference.

The Effect of CBE on College Students' Achievement

This meta-analysis, conducted by James Kulik, Chen-Lin Kulik, and Peter Cohen (1980) and published in volume 50, number 4 of *Review of Educational Research*, was, as far as I know, the first to be published on CBE research. Starting with an initial pool of over 500 titles, the Kuliks ended up with a final group of 59 studies by specifying that each study had to take place in an actual college classroom, had to report on quantitatively measured outcomes for both computer-based and conventional classrooms, and had to be free of crippling methodological flaws.

As with the two meta-analyses summarized above, this group of 59 studies represented different categories of computer use. About two-thirds of the studies looked at the effects of computer-assisted instruction (simulations and tutorials). The second category included 13 studies of the effects of computer-managed instruction. The third and smallest category was composed of five studies that investigated the effects of computer-enriched instruction (program-

ming the computer to solve problems in the academic field the students were studying). Unlike the 1985 meta-analyses, the Kuliks did not calculate separate effect sizes for each category and so the following results are an amalgam of the three types of computer-based education.

Fifty-four studies looked at the effect of computer-based instruction on achievement. The average ES for these studies was a small .25. Thus, a computerized approach to college classroom instruction raised a student's exam score by 1/4 of a standard deviation, or from the 50th percentile to the 60th percentile.

Because of the variability in effect sizes (-1.5 to 3.0), the Kuliks examined the relationship between effect size and study characteristics. Only one characteristic — control for instructor — was significantly related to effect size. For those studies in which different teachers taught the computer-based section and the conventional section, the ES was a moderate .51. But for those studies in which the same teacher taught both sections, the ES was a negligible .13. The Kuliks reasoned that teaching the computer-based class may have induced teachers to do a better job of outlining objectives, constructing lessons, and preparing evaluation materials. If so, then one can reasonably expect a spillover effect when the same person teaches both the computer-based and conventional sections, thereby decreasing the size of the effect. But before deciding that the effect of CBE is always significantly reduced when the same person teaches both computer-based and non-computer-based sections, bear in mind that in the two 1985 meta-analyses cited above there was no difference in ES for studies that did and did not control for effect of instructor.

The effect of computer-based instruction on student withdrawal rates was essentially nil. About 27% of students in the computer-based classes withdrew before the end of the semester versus 27.6% of students in the conventional classes.

Several studies examined student attitudes about quality of instruction and subject matter. On a 5-point scale where 1 is the lowest rating, the average rating of course quality in the computer-based classes was 3.77 versus 3.5 for the conventional classes. This difference translates to a small ES of .24. For attitude toward the subject, the effect was also a small .18.

The Effect of CAI on Students' Cognitive Skills

Writing in volume 24, number 3 of the *Journal of Research on Computing in Education*, Yuen-Kuang Liao (1992), pointed out that while several meta-analyses of the effect of CAI on achievement have been conducted, no one had as yet synthesized the research on the effect of CAI on such cognitive skills as planning, reasoning, critical thinking, and problem-solving. Given the growing use of computers in the classroom, the claims that such use can promote the development of various cognitive skills more effectively than can traditional instructional methods, and the inconsistent findings among studies that have investigated this issue, Liao decided that the time was right to conduct a meta-analysis of this literature.

Liao located 31 studies that assessed the relationship between CAI and the cognitive skills mentioned above and that took place either in elementary, secondary, or college classrooms. The effect sizes for these studies ranged from -.91 to 3.31 and averaged .48. Thus, the average student in a CAI class scored at the 68th percentile on some measure of cognitive skill while the average student in a non-CAI class scored at the 50th percentile.

Each study was coded for the presence or absence of 29 characteristics, five of which proved to be significantly related to effect size. These were type of publication, type of statistic, type of computer, duration of treatment, and type of program. The first three have no practical value and so I won't describe them further. The duration of treatment variable, while potentially useful, unfortunately hid as much as it revealed. Liao sorted the studies into one of five durations (0-3 months, 4-6 months, 7-12 months, more than 12 months, unspecified) and found no statistically significant differences in average ES among the first four categories (.29, .42, .03, .09, respectively). The statistical significance was due to a single study that reported an incredibly large effect of 3.31 but did not (just as incredibly) mention how long the treatment lasted. That leaves type of program. Liao classified the programs used in each of the 31 studies as either drill-and-practice, simulation, problem-solving, or tutorial. The effect sizes for the first three were small and statistically equivalent (.15, .31, and .20, respectively). The ES for tutorials, on the other hand, was quite large at 2.38 and was statistically different from the other three. But since this effect was based on only three studies, its reliability is open to question.

Has Computer-Based Education Fulfilled Its Promise?

This answer to this question is, "Not entirely", but there are indications that it may in the future. On the one hand, the small to moderate overall effect sizes reported in each meta-analysis indicate that computer-based education produces higher levels of learning and cognitive skill than does conventional instruction, although the size of the effects would doubtless disappoint CBE's most ardent supporters. On the other hand, the occasional but dramatically large effects reported by some researchers suggest that under the right circumstances, CBE can consistently produce substantially higher cognitive and affective outcomes than conventional instruction. In other words, researchers may come closer to fulfilling the promise of CBE when they stop asking the unrealistic main effect question, Is CBE better than XYZ instruction?, and start asking such pointed and interaction-oriented questions as, For whom is CBE most likely to be effective? For which kinds of outcomes? For what kinds of learning material? Under what kinds of condi-

tions? With what types of programs? This argument has, of course, been made by many others. Mark Lepper and Jean-Luc Gurtner (1989), for example, wrote in volume 44, number 2 of the *American Psychologist*, that "the expected cognitive consequences of different forms of computer use seem likely to depend on the direction and intensity of the student's attention to different aspects of the program, the depth of involvement or 'mindfulness' of the student, and the types of learning strategies that the student employs. Likely motivational consequences may similarly depend on the student's level of intrinsic interest, perceptions of personal competence and self-efficacy, and goals in undertaking the activity."

On the basis of the meta-analysis evidence reviewed here, it seems clear that the effectiveness of CBE varies as a function of age, ability, type of program and, quite possibly, quality of program. You may have noticed that the average ES decreased as the age/grade level of the students increased from elementary (ES = .47) to secondary (ES = .36) to college (ES = .25). The most likely explanation of this gradual reduction is that as the students become more skilled at cognitive self-regulation and as the population becomes more homogeneous in ability (at the college level), the support that CBE provides through such features as sequencing of material, small steps, and corrective feedback becomes more and more superfluous. The same explanation applies to the finding that the ES for low-ability students (.46) was significantly higher than for high-ability students (.24). As for type of program, Liao (1992) found a substantially larger ES for tutorial programs than for drill-and-practice, simulation, or problem-solving programs. Although Liao would have had no way of knowing, this last effect may have been due to differences in program quality. It's possible that the tutorial programs were of significantly higher quality than the other types of programs.

The reason why Liao would have been unable to systematically test for differences in program quality is because the meta-analyst is basically limited to the published information that is provided by the researchers. And in the case of studies that test the efficacy of instructional materials, researchers almost never offer an evaluation of their quality nor are the materials available to the reviewer for independent analysis. In effect, program quality is a "hidden" characteristic in these types of meta-analyses. Yet there are good reasons for suspecting that the small to modest overall effect sizes reported above as well as their wide range are due to programs whose quality leaves much to be desired.

In 1984, P. Kenneth Komoski pointed out in volume 66, number 4 of *Phi Delta Kappan* that there was a paucity of good CAI software. According to the *Educational Products Information Exchange* (EPIE), a non-profit organization that specializes in the evaluation of instructional materials, 60% of CAI programs were judged "Not Recommended" or "Do Not Consider," 35% were rated "Recommended," and only 5% were judged good enough to be placed in the "Highly Recommended" category. Komoski attributed this shortage of good quality software to developers being unaware of basic learning principles and taking shortcuts in the development process. The step most often omitted was, unfortunately, one of the most critical in the development of a good quality program: the field test.

Komoski's findings were echoed almost two years later by Julie Vargas (1986). Writing in volume 67, number 10 of *Phi Delta Kappan*, Vargas noted that the following four basic learning principles are routinely violated or ignored in the development of CAI programs: a high rate of relevant overt responding, appropriate stimulus control (learning to recognize the stimulus to which a particular response must be made), immediate feedback, and gradually shaping new responses through prompting and corrective feedback. When Vargas evaluated a variety of CAI programs for their adherence to these principles, the results were mixed. Most drill-and-practice programs, which are designed to increase the speed and/or accuracy of an already learned skill, were judged to have adequately incorporated the first three principles. Because these programs do not teach new knowledge and skill, the criterion of shaping was not applied. Most simulations, which are designed to provide opportunities for application of previously learned knowledge, fell short in allowing for overt relevant responses, were judged acceptable in bringing about appropriate stimulus control and in providing feedback, but were judged deficient in shaping new behavior. Tutorials fared worst of all. Vargas judged many of these programs to be deficient in adhering to all four principles.

So until the software quality picture improves, what's a concerned educator to do? Is there a relatively easy way to insure that students are exposed to the best available drill-and-practice, simulation, and tutorial programs? Yes, and it can be done in one of two ways. First, one can find in a good college or university library several accurate and useful reviews of instructional programs. Shirley Boes Neill and George W. Neill are the authors of an annual guide called *Only the Best: Preschool -Grade 12*. Each program in their guide has been judged to be of high quality by two or more educational organizations. *T.E.S.S. The Educational Software Selector* is a comprehensive guide that contains over 7,700 descriptions of programs in more than 100 subject areas and is published by EPIE. Hundreds of these descriptions include a rating from a trained analyst. *Software Reports*, which is published by Trade Service Corporation, provides program evaluations in 20 subject areas and for every grade level. Second, there is the do-it-yourself route. Julie Vargas, in the article cited above, provides a list of eight criteria to consider when choosing a CAI program. Volume 13, number 3 (1990) of another EPIE publication, *EPIEgram*, describes the 12 criteria used by EPIE analysts to evaluate the quality of educational software. And finally, Howard N. Sloane, Hope Myers Gordon, Carolee Gunn, and Vicki Mickelsen (1989) provide an extensive checklist with which to evaluate educational software in *Evaluating Educational Software: A Guide for Teachers*.

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MID-WESTERN EDUCATIONAL RESEARCHER

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The University of Dayton, Ohio

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In This Issue

Our lead article *The "Problem" of Gender in Teacher Education* highlights a favored theme of *MWER*. Differences among people are assets to be fostered, not problems to be avoided or corrected. From time to time, *MWER* will use its platform to present the case for diversity in our institutions. Whether differences are gender-related, ethnicity-based, or research-methodology oriented, *MWER* wishes to be counted among those that respect differences, provided, of course, that scholarliness and comon human ethics are not compromised.

We invite scholarly contributions based on research in multicultural and other diversity-associated issues.

Ayres D'Costa, Susan Brookhart, and John Surber

ON THE COVER

The University of Dayton is a private, coeducational school founded and directed by the Society of Mary (The Marianists), a Roman Catholic teaching order. It is among the nation's largest Catholic institutions of higher learning. Aware of the richness of cultural diversity, representatives of many faiths are numbered among the university faculty and students.

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The "Problem" of Gender in Teacher Education
Sandra Hollingsworth, Michigan State University

3

Voices in Education
On Authentic Assessment
Marlene Schommer
Wichita State University

13

Setting An Agenda for Educational Renewal:
A Conversation with John Goodlad
Mary R. Sudzina, The University of Dayton

19

An Investigation of Variables Related to Student Achievement
C. R. Bulach, West Georgia College
Bobby Malone, Murray State University
Christy Castleman, Murray State University

23

Book Review
Carmen Montecinos, University of Northern Iowa

31

MWERA Association News Section

MWERA Conference Survey Results
12

Election Results
17

CALL for Proposals for Editor(s)
18

Call for MWERA Officer Nominations
30

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The "Problem" of Gender in Teacher Education[1]

Sandra Hollingsworth
Michigan State University

Abstract

Sari Knopp Biklen and Diane Pollard, editors of the 1992 Yearbook of the National Society for the Study of Education (NSSE), began their introductory chapter with this definition of gender:

> *Put very simply, we might say that one's sex is involved in every activity connected to education. Since every interaction involves a male or a female, sex is everywhere; we must take it into account. When to take it into account looms as a big question because it may be central even when it seems to have no relation to what is going on. [While] being male or female carries few meanings in and of itself; its most potent meanings come from the social and cultural meanings attributed to it. These meanings we call gender, the social construction of sex. (1993, p. 1).*

While sex physically describes either male or female, gender describes the way that particular characteristics, behaviors, attitudes, values and emotions are assigned and reassigned culturally to a particular sex through socialization processes, including education. The feminist authors of that NSSE Yearbook, like most feminists, do not see attention to gender as a male versus female issue, but rather as an issue that embraces social justice for all people; the freedom of both men and women to adopt the characteristics assigned culturally (and/or stereotypically) to either sex in any life position. Further, most feminists do not think about gender in isolation of other identifying characteristics of those engaged in education—like race, class, generation, and so forth. And most of those other categories are appropriate for research analyses in teacher education. Attention to gender, for the most part, seems to be "taboo," perhaps because it is not clearly distinguished from sex.

Although there is a wealth of research available which documents both recent changes in the social construction of gender and the intricate relations between the dynamics of gender and education, it is noticeably absent in teacher education. A quick perusal of the Handbook of Research on Teacher Education (Houston, 1990), for example, or American Educational Research Association (AERA) publications, or teacher education journals, shows that researchers and scholars are either silent or minimally attentive toward the impact of gender on learning to teach. The major exceptions are in the areas of critical sociology and the history of teacher education (see, for example, Zeichner & Gore, 1990; and Herbst, 1990). In other words, gendered relationships do not seem to be an important part of "the knowledge base" for teachers.

On the other hand, the literature clearly stresses the importance between relationships of roles, beliefs, and opportunities to reflect and acquire knowledge as part of what teachers and teacher educators must know in order to participate powerfully in education (Richardson, Anders, Tidwell, & Lloyd, 1991; Woolfolk, 1994). Yet, teacher educators often disregard the role of gender in educational participation. Perhaps that is why opportunities to participate in specific educational roles are still distributed according to gender. Men, for example, are routinely discouraged from teaching at the primary level, while they make up 95 percent of school superintendents (Campbell and Lam, 1993). Perhaps, if we traced some of the origins of those distributions to teacher education, we could help reverse the imbalances.

Even if skeptical about the power of teacher education to make a difference in such societally conditioned life roles, teacher educators should still consciously attend to the gendered nature of our profession. Since we are concerned with teachers' knowledge development and articulation, and since so many females are involved in education, we need to know and act upon the ways that knowledge is constructed with respect to gender. Yet few of us are familiar with feminist literature. Thus, the central questions addressed in this article are: (1) *Why do we fail to attend to the "problem" of gender in teacher education?* and (2) *What can be done to address the problem?*. To find out, I drew some hypotheses from extensive literature reviews, engaged a random sample of my teacher education colleagues in an open-ended electronic mail conversation, and conducted personal conversations with others willing to talk about gender and teacher education.

Why we fail to attend to the "Problem"

Hypothesis 1

"It's women's work:" The normative position of the teacher. Susan Laird (1988) suggests that one predominant view of teaching is that it is "a woman's profession" and therefore the positioning of women close to children is both normal (needing no analysis) and acceptable (needing no critique). In other words, many educators may feel that positioning women in occupational roles which enable close contact with children (while discouraging men from taking such jobs), and positioning men and others with the authority to establish educational policy far away from children

[1] *Based on an Invited Address at the 1994 conference of the MidWestern Educational Research Asoociation, Chicago.*

and their teachers is simply part of the normative social order. However, when I asked my colleagues in teacher education about the lack of explicit attention to gendered relationships in our profession, most had not given the issue any serious thought. Several of my male colleagues did write about the personal rejection they felt from their professors and peers when they announced they were going into elementary education. Until fairly recently, men have even stayed away from research on teaching practice—historically seen as an "activity of low prestige, suitable chiefly for women" (Clifford & Guthrie, 1988, p. 116)—and have, instead, professed allegiance to scientific and disciplinary problems and methods. Henry Holmes, Dean of the Harvard School of Education from 1919 to 1940, in fact believed that the school's "reputation and success within Harvard was directly proportional to its dominance by males" (Powell, 1980, p. 154).

Some of my colleagues agree that, while biology and society have predetermined gendered roles in education, the amount of space that women take up is, nonetheless, an embarrassment to the profession. One commented: "The daily practice of teacher preparation is largely unexamined territory because examining it closely would prove to be awkward and embarrassing in various ways that tend to be incompatible with the status and standing that teacher educators have or would like to have; gender is just one of those embarrassments." Another brave male colleague wrote to me that discussing gender would call attention to the fact that we teach mostly women who work with children and "that ain't exactly a high status thing." Still another male faculty member says he purposely speaks of his "students" in order to gloss over the fact that most of them are women. Some of my male faculty partners talked of the difficulty of male teacher educators raising women's issues in class. Here's an example:

> *I remember in my summer course that I [used] a passage from Annie Rogers' essay on "voice, play and the practice of ordinary courage in girls' and women's lives." The passage is about adolescent girls' loss of voice, or "ordinary courage." I asked my class (mostly women) to read and discuss the passage with me, to talk about what it might mean for teachers. Ordinarily, I am fairly good at getting discussions going, and am not usually shy about violating norms for good reasons. In this instance, however, I remember feeling that conducting the discussion was like pulling teeth, and that I felt like I had just broken some important rule. I don't know what to make of that event, but I suspect it is somehow related to my tendency not to use explicitly feminine analyses.*

Other colleagues remarked that discussing the "normative" hypothesis about teaching as "women's work" with our male and female credential candidates might make our students feel disempowered, angry and hopeless. One woman mentioned having to drop a passage by Sara Ruddick on "maternal thinking" (1990) because it made both students and faculty uncomfortable. Another of my female colleagues offered this provocative explanation:

> *Teacher education entered the academy [wanting] to be seen as a body of professional knowledge. . . .it was a scientific knowledge—not what any mother or care-giver would know just from being alive and functional in the world. . . .If we explore either adult development or what gender adds to the knowledge base, we fear our status as a special knowledge will vanish. Looking at how gender has guided research, problem framing, questions that are rewarded if asked—this could be BAD news. We might find out that women's ways of thinking parallel the knowledge base and then we might have to discount any pieces of that knowledge base that have crept in because women were involved! If we find that there has been no parallel, that women have been excluded from the development of the knowledge base, that's worse. Then we'd have to ask whether teaching involves something valuable and as yet unexplored. If so, we're right back to the awful space where teaching and the minds of women are linked in some way. Where does that leave us as a profession? A science? If teaching has a decidedly female component, then any mother could teach—the slippery slope to avoid at all costs.*

For Maxine Greene, our obligation, as professionals, is to measure and describe that slope: naming the obstacles in front of us is the first step in overcoming them (1979). To Susan Laird, it means to challenge what we mean by "normative" in the teaching profession, and reconstruct it through instruction.

> *To take "woman's true profession" seriously at last and begin this immense critical project of reconceptualization, I urge the importance of philosophical inquiry concerning the meaning of feminist pedagogy, its implicit challenge to the dominant and so-called gender-neutral concept of teaching that the Holmes Group and the Carnegie Forum do not challenge, and the as yet unimagined practical possibilities it may suggest for actually educating—not simply training—schoolteachers (1988, p. 463).*

Hypothesis 2

"There's no time in teacher education programs to address gender": The focus on subject matter and generic "reflection". Some of my colleagues reminded me that the establishment of schooling around the "structure of the disciplines" and the parallel focus of research on teacher education being primarily subject-matter oriented doesn't leave much room for cross-disciplinary issues such as gen-

der (see Borrowman, 1965; Reynolds, 1989; Shulman, 1986; 1987). Further, increasing credential requirements (which do not include attention to gender) make space for it problematic. We must also note that talking about disciplinary knowledge is much less political and provocative than talking about whose knowledge is privileged through the prescribed disciplinary study.

Led by the work of Donald Schon (1983;1987), however, many scholars are not only attending to what teachers ought to know, but how they ought to think about it. Indeed, program committees deliberating the design of new teacher education programs, give increased attention to the structural spaces and practices of reflection, but not to gender. The mission or agenda of major funding agencies has been around the "big ideas" in subject matter and teachers' thoughts about them. Teachers' own political, gendered and epistemological positions relative to the knowledge, however, are not typically topics for reflection. Yet some scholars of teacher education are now arguing that reflection without attention to the social context of knowledge and schooling—including gender—is insufficient (see Gitlin, Bringhurst, Burns, Cooley, Myers, Price, Russell, & Tiess, 1990; Liston & Zeichner, 1991).

Hypothesis 3

"I'm doing it, already!" The Inclusiveness of Multicultural Education. Many researchers and teacher educators are including diversity and multicultural issues in their current work, and believe they are also attending to "gender" as part of that category. Several colleagues wrote that they spent "a day" on gender in their multicultural courses. Another colleague said that, at some deep level, there is cognizance about the feminization of schooling—"and it must come out somehow in our program, although it would be hard to say exactly where."

Such arguments about "theoretical inclusiveness" regarding issues of diversity have been heavily critiqued in teacher education programs for their lack of breadth and vigor. Caroline Sherritt's scathing attack on multicultural research, for example, speaks straight-forwardly to educators' failure to adequately understand and address sensitive issues.

> *Don't presume that you can become multicultural without addressing issues of oppression and discrimination. Don't focus on cultural plurality if you are unwilling to deal with sensitive issues, such as religion, gender roles, standardized testing, poverty, and politics (1990, pp. 215-16).*

Conversations on how well we are addressing diversity in our programs could reveal similar critiques of teacher education research and practice.

Hypothesis 4

"There's no need": The gender-blind nature of educational research. The dominant methodological paradigm which has been used to study teacher education in this century has stressed objectivity and neutrality. Therefore, a good research design is expected to account for personal differences, rendering gender non-significant (Reinharz, 1992). As we know, however, there are many postmodern and poststructural critiques of the myth of objectivity (e.g., Harding, 1991; Lather, 1991; Smith, 1987). Those critiques state that societally positioned differences—such as race, class and gender—powerfully biases not only the results of educational research but authors its design. Such critiques have led to an increased awareness of bias in research. However, the category of gender is still the most likely to be ignored or under-researched in teacher education.

Funding opportunities for studies on women and girls in education have been historically limited. Not only has the U.S. Department of Education failed to widely support specific programs, but gendered relationships are not a significant part of any study within major government funded research centers, such as the National Center for Research on Teacher Learning at Michigan State University (Campbell, 1989; Campbell and Greenberg, 1993). While attention to gender is increasingly questioning such practices, change in this area is slow.

Some of my colleagues wondered whether research agendas might have shifted to include more gendered attention with recent increases in both numbers of women in educational research—and a correlational acceptance of qualitative research designs. That has not proven to be the case. Although the balance is clearly changing following the civil rights and women's movements of the 1970s and 1980s, most researchers in education are still white and male (AERA, 1989), and white men have traditionally been the population studied (quantitatively) for educational theory and practice (Campbell, 1981; Klein, Ortman, Campbell, Greenberg, Hollingsworth, Jacobs, Kachuck, McClelland, Pollard, Sadker, Sadker, Schmuck, Scott, & Wiggins, 1994). One of my colleagues suggested that even though the man/woman ratio in AERA is now approaching 50 percent, and many researchers—both male and female—are acknowledging the problematic nature of "objective" research and exploring alternatives, these inequities will remain unless we adopt a consciousness and commitment toward exploring gendered relations.

Hypothesis 5

"It's taboo." Emotion and controversy. Attention to gender is clearly minimized in teacher education because of its emotional, controversial and sensitive nature (Britzman, 1991; Miller, 1990). Over and over again my colleagues told me they were not comfortable with sensitive issues such as gender, and—as a result—could hardly expect their student to react positively. Therefore, they stick to safer areas of diversity, such as "other people's" race and social class.

Some of my colleagues and many of my students suggest that research on girls as women is purposely ignored by both women and men, because men might find it threatening and offensive. Taking a different angle, one of my colleagues courageously told me about the unspoken practice of males teaching young adult females while struggling with (often uninvited) thoughts about sexual relations. He also lamented that there is no forum for addressing his confusion and concern over gendered roles and relations, because that part of his practice "goes without the discipline that might be afforded by conversation."

Additionally, because of the "backlash" against feminist critiques of society led by the popular press (Faludi, 1990) and the perceived radical nature of a unified feminist movement, scholars of teacher education are less likely to have read or engaged in conversation about feminist analyses of education. Yet ideally, feminism and education have much in common—both aim to empower all people, and to provide opportunities for the full expression of human potential (Gaskell & McLaren, 1991). See the National Women's Studies Association 16th Annual Conference program, 1994; Britzman, 1992; and Liston & Zeichner, 1991, for a discussion of contributions of feminism to teacher education. Feminist literature has impacted so many areas of life in recent generations that, as teacher educators, we can no longer afford to ignore it—no matter how uncomfortable we may be with gendered issues. Deborah Britzman (1993) tells us:

> *The category of gender becomes even more controversial when we consider how gendered selves are tied to specific histories of social justice, civil rights, colonialism, economic struggles, social positions and to the emotional commitments that are built because of these histories. Exploring the contradictory meanings of gender requires a second and more complex look at how received discourse, stereotypes, and social practices make gender a significant site of identity struggle. . . .To become open to topics routinely considered "taboo," "political," or "too controversial" for classrooms, educators must come to terms with the messiness of emotional commitments as they work through their own fear that inviting controversies means not being in control (p. 28)*

Nonetheless, a few of my colleagues even told me that they could not address issues of gender (or race and class either) in research forums or in classrooms because they felt "silenced" by the need to be "politically correct." William Tierney helps us understand such a position as conservative.

> *[Conservatives] contend that demands for ideological conformity, or "political correctness," have encroached on basic academic freedom to such extent that the free expression of ideas no longer exists on college campuses. Indeed, the conservatives believe that the curtailment of free speech has so poisoned the atmosphere in the academy that if one disagrees with a "politically correct" position, one will not merely be labeled a racist, sexist, or some other epithet; the recalcitrant will also face sever reprimands, such as administrative sanctions. (1993, pp. 143-144).*

Perhaps the best place to start exploring these issues is among ourselves.

What Can be Done?

While we may not be able to experiment with these hypotheses in our classrooms immediately, we can, as teacher educators, educate ourselves about the many feminist points of view, review some of the major contributions of feminist scholarship to education, build a case for the importance of addressing problems of gender—and perhaps demystify some of the controversy. In this section I will attempt a beginning by calling for a conscious interruption of the stereotypical notion that feminist scholarship is radically unified and inaccessible to teacher educators. I will briefly describe the three major periods of feminist scholarship since the 1960s and their critiques of education. In each period, I will give an example of the impact of that scholarship on particular teacher education courses.

Unequal Access to Knowledge and Schooling: Liberal Feminism of the 1960s and 1970s.

Feminist scholarship which accompanied the rise of the Civil Rights and Women's Movements of the 1960s and 1970s was based upon the idea that women should have the same opportunities to education and the professions that men have. Many studies pointed out, however, that girls' opportunities were limited in schools because of texts, curriculum, and instructional programs that discriminated on the basis of gender (Klein, 1985; Sadker & Sadker, 1985). The most salient contributions of this scholarship were in the areas of sex equity with goals of reducing gender biases and stereotyping (Klein, et al, 1994). Legislation, in the form of Title IX of the Education Amendment (1972), helped educators address gender equity in athletics and career counseling. Special programs for girls in math and science also were a product of this period. One colleague informed me there is surprisingly little attention to gender and mathematics in teacher preparation "given what we understand about our students who are almost all women and their likely past experiences with mathematics!" Perhaps because such inequities were fairly easy to document and address, some of the "equal access" scholarship of the liberal feminist period has been included in many teacher education programs—especially in social foundations or multicultural coursework (Britzman, 1992). Yet simply acknowledging historical

gendered inequities, as if they were a product of the past, is not enough.

When I address gendered relations in my teaching, I also begin with questions about equity and access, as most credential candidates do not come into teacher education programs aware of this history. I talk to them about my own personal school experiences where I was treated inequitably. I tell them how I was barred from higher levels of mathematics in high school because "girls don't need that level of mathematics." I draw upon their own experiences of exclusion. I then ask them to participate in action research projects on immediate as well as historical questions of access and equity. In a preservice course which integrates social studies, literacy, math and science, for example, I ask my students to conduct two research projects. One is to review texts used in elementary classrooms for gender and other biases, and the second is to interview children about their thoughts about their own gendered socialization in school with regard to subject matter study.

The results are routinely surprising to the students. Not only do they discover that the content of texts used in schools today is very similar to that of their parents' or their own school experiences—with the exception of boxed add-ons to include famous women and ethnic minorities—but that most children are still separately socialized into boys' studies (math and science) and girls' studies (humanities). Since rewriting texts or societal patterns are beyond what most credential candidates feel they can do, we spend a major part of the class determining what their responsibilities will be as teachers to address these findings, and what action they can take to increase opportunities for equal access to knowledge. We learn, for example, how to supplement inadequate texts with their own and student-based research into these issues (see McCormick, 1994). Whether they will or not actually do so as practicing teachers, however, seems to depend on their knowledge, their sources of support and their commitments (see Hollingsworth, 1994b).

Whose Knowledge gets Represented? Cultural or Difference Feminism of the 1980s.

The scholarship in this period of feminist critique focused on epistemological and moral assumptions which underpinned knowledge and its use in educational research and practice. The potential impact of this work is to interrupt the socialized concepts of justice, knowledge, research and education as we now know them. Since this work is more controversial than the agendas of the liberal feminist scholars, these studies—reporting on women's different ways of knowing, moralizing, and acting— have had less acceptance in teacher education. Groundbreaking work by Carol Gilligan (1982) on girls' moral development, by Nell Noddings in the ethic of care (1984) and by Belenky, Clinchy, Goldberger, and Tarule (1986) on women's ways of knowing—suggests that schools should value traditional feminine values of "care" as well as the typically masculine values of "rights." The research also suggests that schools should take care to value women's voices in classrooms—voices which are often silenced because of their gendered differences (Lewis & Simon, 1986). Very little of this "difference" feminist scholarship is addressed in teacher education programs, again unless it is weakly attached to the concept of multicultural education. Perhaps, as the examples from my colleagues showed, that is because it is difficult to do. However, see a recent case-book on gendered differences in school by Judith Kleinfeld and Suzanne Yerian (1994) might provide an excellent vehicle into this area.

Another reason this work is ignored in classrooms may be because the critique of cultural feminism scholarship resonates with too many educators' experiences. We, as college-educated people, socialized to believe in hegemony—or the dominant ideology in society which leads us to ratify the "status quo" as best for most Americans (and to have personally benefited because of it)—have a hard time feeling "voiceless" or marginalized. Further, particular groups of women (e.g., African-Americans) do not feel silenced in the same way that the Gilligan, Belenky and Noddings work might suggest (see Crichlow, Goodwin, Shakes, & Swartz, 1990; Mohanty, Russo, & Torres, 1991). I have certainly found resistance to cultural feminism scholarship when I have tried to teach from the "difference" perspective. Let me give an example.

In a graduate course for teacher educators at U.C. Berkeley, I asked the students to read critiques of teaching as a "women's profession" (see Laird, 1988), then to analyze graduate curriculum, teacher exams, teacher evaluation protocols, and teaching reward structures to get a sense of the values they represented. Routinely, the values generically attributed to "women"—such as care, inclusion, compassion, and multiple perspectives were underrepresented when compared to values generically attributed to "men" such as detachment, independence, consistency, principled knowledge and leadership. Even though the bias inherent in teacher education, evaluation and reward structures became clear in these studies, class members were reluctant to conclude that gendered relations were problematic. One student wrote:

> *After reading Laird's article, I found I did not relate to it at all in terms of the theses that underlie the whole thing—like that [teaching is] demeaning because it's woman's work. I just didn't resonate with that at all. I guess as a teacher, I never thought of myself as a woman. I thought of myself as a human being who had a real interest in kids and learning. I always felt respected and treated very professionally by men and women. The only [feminist issue] I can connect to is the pay difference. I don't think differential pay for "men's jobs" and "women's jobs" is right at all.*

Without resonating experiences, exposure to information about cultural feminism does not appear to lead to action. Further, I am now much more sensitive to the fact that my students and I do not automatically share similar experiences; therefore I now treat cultural feminism as a "problem." I continue to give my own personal stories about how I have been treated similarly (when I conform) and differently (when I step outside of societal norms). I talk to them about my biography which has led me to be so critical of discriminatory treatment based on gender. I tell them of my grandmother, named before the turn of the century after a famous early feminist—Frances Willard—and the history of strong women in my family which leads me to view the world as I do.

Beyond Equity and Difference: Postmodern Feminisms of the 1990s.

Rather than focus on equity or difference, feminist scholars in the current decade have tried to "deconstruct" the notions of "man" and "woman" to situate them problematically in relation to experience. Those scholars (e.g., Britzman, 1993; Ellsworth, 1989; Fine, 1992; Lather, 1991; Weiler, 1988) might understand my Berkeley student who "never thought of [herself] as a woman" on the grounds of conflicting conceptions of what the category of "woman" includes. They would point out that the social construct of "woman" is not universal—nor is it the identifying characteristic that makes all women feel invisible in school (see Hollingsworth & Miller, 1994). Perhaps my student—in her position as a white woman teacher in an affluent school district, teaching with values which approximated those of the school community—did not experience the marginalization that other women and men teaching in different circumstances often do. Sometimes men in my courses feel more marginalized in education than women. Other teacher educators have discovered similar patterns. Liston and Zeichner, for example, talk about their gendered participation as men in elementary education in marginalizing terms.

> *As male elementary teachers and now as (male) teachers of (predominantly female) prospective teachers, we have observed subtle and overt reactions to men's participation in "women's work." Many of our prospective women teachers express surprise that a man would want to be an elementary teacher. Many of our male college mentors thought we should choose more appropriate careers. And, more recently, many of our colleagues have advised us to focus on matters other than teacher education. Somehow teaching, especially at the elementary level, is not a job for a man. (1991, p. 111).*

Untangling the intersecting identities of man, woman, social position, community, values, educational background, parenting, sexuality, race, generation and other descriptors in understanding and guiding teachers' learning may seem an overwhelming responsibility for teacher educators. On the other hand, our commitment to individual differences and student responses in educational practices, as a colleague wrote to me, is grounds for attending to this literature. It is in the area of postmodern feminism that the most controversy has arisen and the least application to teacher education has been made, perhaps because it is the most complex and the least prescriptive. Yet, for me, it holds the most promise for transforming how we, as teacher educators, can include gendered and other social relations as part of the knowledge base. And though we are without prescriptions about how to accomplish this task, we are not without guidance.

We know that our teacher-students must attend to their own beliefs and biographies to understand how to overcome traditional and out-moded ways of teaching which are familiar to them (Britzman, 1987; Gitlin, et al., 1992). We know that, as teacher-educators, we must examine our own philosophical and political constructs as we ask teachers to examine theirs (Connelly & Clandinin, 1988; Kilpatrick, 1992). We know we must come to know ourselves in relation to others (Greene, 1979; Jersild, 1955). We must withhold immediate judgment (Hollingsworth, 1994b) to allow the uncertainty necessary for knowledge transformation while modeling both epistemological and instructional change (Belenky, et al., 1986). We must help teachers analyze, deconstruct and reconstruct their beliefs about themselves and their students (Guskey, 1986). We must be brave and courageous in our efforts to transform teacher education (Sockett, 1992).

I've recently helped design a master's program in curriculum and teaching at Michigan State University based not only on these guidelines, but a belief in an inquiry approach to continuing teacher education, a commitment to tackling gendered relations from the perspective of postmodern feminists and others who think similarly, and some research on my own preparation of teacher educators at UC Berkeley. We begin the first course in the program—Professional Development and Inquiry—by deconstructing the notions of "woman," "man," "teacher," "knowledge," and "research." We learn to see those concepts differently. We explore our own biographies to determine the narrative construction and reconstructions of our own values, preferred paradigms, teaching and learning styles, identities relative but not uniformly connected to gendered notions on morals and values, or to various learning and teaching paradigms. We do all of this conversationally, in small groups, where we can come to know each other and build intimate learning communities before we read what other experts have to say about teaching, research, reflections and learning. To keep my views from being the most valuable in the course, I let go of my power as sole evaluator of students' knowledge. We treat course evaluation as problematic. I name what we're doing as an example of feminist pedagogy, and I explain that I hope such naming will give

all of us the license to chart our own progress. For more specific details on this course, see Hollingsworth (1994a, 1994b).

Through such introductory and exploratory processes, we come to see that, even though we have participated in similar education programs and were taught a similar "truth" or knowledge base, that our own experiences and ways of making sense of the world led us to construct or give meaning to that truth in different ways—and that we continue to reconstruct our knowledge given our shifting positions across personal histories. Next we engage in teacher or action research projects to look at our own practices with personal or meaningful questions. We design ways of researching those practices which are consummate with our own personal epistemologies of knowledge and our particular work environments. Some of our research projects specifically deal with gender in the classroom; all of them, however, deal directly with the gendered (and other) nature of self and teacher as those concepts change over time. In fact, we push each other if our topics and our lives seem too disconnected. At the beginning of our work, we are more interested in how we personally construct projects for educational research rather than their results. As a result of this introductory course, we begin to see ourselves as "teachers" and our students as "learners" in different ways, then to act on those understandings through the remainder of the Master's program and into our various classrooms. To incorporate similar features into other courses, I would encourage teacher educators to engage in similar processes themselves, either by auditing courses taught in this style, or through informal conversation/study groups organized around feminist literature. One teacher educator who visited my course at U. C. Berkeley had this to say about the experience two years after it had ended:

> *To have the opportunity to come together with others whose life work is to enhance the development of teachers and engage in the construction of knowledge was transforming and emancipatory. Letting go of my conceptions of the 'official' occupational role of teacher educator, I was able to move from a notion of myself as intermediary between the knowledge base and the novice teacher to an appreciation for the power of biography and the function of the self in teaching and learning to teach. . . .(see Gallagher, 1992). . . .*

Stephen Swidler, a doctoral student who co-taught classes at MSU with me for several years from this perspective wrote to me about his future as a teacher educator: "This is the only way to teach that makes sense....to let go of what students are learning. To push for having them learn about themselves as gendered and other identified human beings searching for their own interests and methods. Otherwise, we're fooling ourselves."

In short, courses which look at gendered and positional relations of teaching and learning seem to hold promise for developing knowing, critical, action-oriented, reflective teachers of all students. I challenge us as a field not to ignore a body of scholarship—based on critiques of gendered notions of sex—which has led to more societal changes in the last 30 years than in the previous 200—and to move beyond the stereotypical notions of feminist scholarship and to find out which interpretation validates our own life experiences—then use that scholarship to rethink both our research and our teaching.

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MWERA CONFERENCE SURVEY RESULTS

The MWERA Board of Directors (BOD) conducted an important membership survey at the time of the 1995 Elections Ballot. BOD is exploring alternatives for the annual conference site, hotel, costs, and dates. The Bismarck Hotel is under new management, and our costs are increasing sharply.

About 200 members who responded to the 1995 Election Ballot also responded to the Survey. All responses were anonymously sent to the Tellers' Committee (E. Jane Williams, Chair) who compiled the data and developed the Summary Table presented below.

Note that the Survey asked members to respond to 10 factors, 9 of which required a 5-point Likert Scale rating ranging from 1 = Strongly negative, to 3 = Neutral, to 5 = Strongly positive. Factor #9, which utilized a different response format, asked: How much of a room-rate increase could you tolerate and still attend the Conference? Nine room-rate increase levels, ranging from $5 to $50 (in incremental steps of $5) were listed.

	Factor	Mean	Std Dev	N
1.	The Bismarck hotel?	3.14	1.12	199
2.	Location: downtown Chicago?	4.12	1.05	199
3.	Conference time: October?	3.81	0.96	199
4.	Lowest possible room-rates?	3.84	0.98	195
5.	Quality of conference speakers?	4.16	0.87	199
6.	Quality of paper-sessions?	4.26	0.76	201
7.	Opportunity to interact with colleagues?	4.53	0.69	197
8.	Move conference from Bismarck if it costs more?	2.83	1.26	196
9.	Room-rate increase tolerable? The modal increase in cost tolerable is $15, however the frequency of response for this increase is 39; while the frequency for a $10 increase is 31, and for $20 it is 36. The mean response is for a 15.88 increase; while the SD is 10.78			
10.	If conference moved to suburbs, would you attend?	3.51	1.38	197

The MWERA Board of Directors invites your comments to these Survey responses. Please direct your comments to MWERA President Tom Andre. Note that Tom's address and phone # information are published under the CALL for Nominations in this Issue of MWER. See page 30.

Voices in Education
On Authentic Assessment

Marlene Schommer
Wichita State University

Leaders of education were asked to respond to the following questions:

1. *What are the roadblocks toward quality authentic assessment?*
2. *Do you think authentic assessment is feasible at the national level?*

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Roadblocks & Feasibility: We are making the same mistake with so-called "authentic assessment" that we made with traditional assessments: believing that there is a single "correct" form of assessment. Educators are consummate followers of bandwagons. For years, the bandwagon was multiple-choice assessment, and the prevailing but false belief was that IQ, or SAT scores, or ACT scores, or whatever somehow told you a person's true abilities. Now, of course, people recognize how wrong they were, the true panacea is authentic assessment, so let's fool ourselves into believing that such measures tell you a person's true abilities or achievements. Psychologists have long recognized that the best assessments use "converging operations"; multiple assessments of the same construct. An ideal assessment battery would therefore involve a variety of types of assessments, including both conventional and modern ones. Any single kind of assessment benefits some students unfairly over others. Certain learning styles, certain ability patterns profit from one type, but not another. Ideally, then, we need to use many different types of assessments to average over measurement error caused by single methods. The question is not therefore "what are the roadblocks," but are we going to make the same mistake again of believing that there is a single answer, and it's this year's (or decade's) fad.

Robert J. Sternberg
Yale University

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Roadblocks & Feasibility: Performance assessment, as one type of authentic assessment, holds great promise for leading much needed curriculum reform. The tasks that make up performance assessment are designed to mirror good instruction and to elicit from students the types of accomplishments that are necessary to be successful in the world of work and in subsequent education. For performance assessments to realize their full potential for increasing both the quantity and quality of student learning, several difficulties must be overcome. First, like any type of assessment, performance assessment must begin with well-defined domains of desired student accomplishments. The domains are the targets for instruction, not the specific tasks on a performance assessment. Second, performance assessment tasks take considerable time; few tasks can be used in any one assessment. Thus, problems of task stability must be solved. Third, if performance assessments are to yield useful information for external accountability, problems of equating over time will need to be solved. If these difficulties are resolved, performance assessment is as feasible at a national level as it is at a state or district level."

Andrew C. Porter, Director
Wisconsin Center for Education Research

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Roadblocks: Roadblock Number One is that the term "authentic assessment" has no definition. It *might* mean assessments that are relevant to students, engage them in learning, assess meaningful complex outcomes, and provide opportunities to demonstrate highly valued knowledge and skills. Who knows? These same characteristics could apply to well-conceived traditional assessment formats as well.

Roadblock Number Two is that many people are proceeding under the incorrect assumption that any authentic assessment is *automatically* quality authentic assessment. Fortunately, many will also wake up on the morning after and realize that authentic assessments can be poorly constructed, lead to incorrect decisions, be biased, unreliable, invalid, drive curriculum, lead to rote learning, and so on. We must first understand that it is not the format of the assessment but the consequences associated with its use that bring about all of the unwanted effects many have come to associate with multiple-choice formats.

Roadblock Number Three is the widespread belief that nearly anyone can create, administer, and score a high-quality authentic assessment. "I've been doing this for years," is a commonly heard reaction to authentic assessment. Unfortunately, in many cases what people have been doing for years is poor practice.

Feasibility: It depends on what is meant by authentic assessment, and as I noted earlier, no one knows for sure. Some types of assessment alternatives are desperately needed at the national level. For example, more challenging, complex, application-oriented tasks would be a welcome addition to textbooks, national examinations, curriculum materials, etc.

On the other hand, assessment alternatives like portfolios would be a disastrous direction for national-level applications. It is easy to see that this is the case once the proper uses of portfolios are understood. Portfolios are unsurpassed as documentation of individual development in circumscribed areas; for example, in viewing a student's development in use of descriptive language in compositions. They are ill-advised as measures of discrete skill attainment, as monitors of general academic achievement, or as accountability instruments. The issue has been well stated by Rick Stiggins who has urged that we pay closer attention to matching assessment strategies with the assessment "targets" we

want to hit.

In sum, the real value of the emerging alternatives will be seen in whether they result in more attention to sound assessment practice, in more teacher involvement in designing high-quality assessment systems that respond to the individual needs of students, and in increased attention to the relationship between assessment and instruction. If these things occur, then the move toward assessment alternatives will be a tremendous benefit to American education.

Gregory J. Cizek
The University of Toledo

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Roadblocks: Two major roadblocks are worthy of our attention. The first roadblock to the development of quality assessments of all kinds is our almost complete lack of assessment literacy throughout our school culture and our society. Those who do not understand the basic principles of sound assessment cannot hope to meet those standards of quality.

The second roadblock may be our lack of willingness to spend the money needed to assess well. We have spent the last 60 years convincing society that assessment is cheap, that one can assess student achievement for $2.50 per student per year--the cost of a once-per-year standardized test. Now we acknowledge that this definition of academic success is not now and never was acceptable as a sole criterion of school effectiveness due to the narrowness of the definition of academic success it represents. Instead, we advocate the use of far more complete and more expensive assessment methods. That leaves us with 60 years of convincing to undo.

Feasibility: Not only is national performance assessment not feasible due to the immense cost, but it is a very bad idea at this time. We have spent the last 60 years building layer upon layer of ever more centralized, ever more standardized testing into our educational system with little discernible impact. We started with local testing in the 1960s, added statewide testing in the 1970s, national and international testing in the 1980s, and faced the prospect of a national every pupil exam in the 1990s with little evidence of any enhancement of the American educational system. The cost for these layers of testing now exceeds a billion dollars per year, every year. More will not help.

The reason is that these testing programs operate on the assumption that the quality of schools is determined by policy-level decision-makers at district, state or national levels. Give the right information about student achievement, we are told, policy-makers will make the informed judgments required to make schools work.

The fact is that these are not the decision-makers that make schools work. Three groups of decision-makers make the decisions that determine the effectiveness of schools for each individual student and for students considered collectively. In order of importance for student well-being, they are students themselves, their teachers, and their parents--all of whom rely on the teachers' day-to-day classroom assessments to inform their decisions. Until we can assure the quality of those classroom assessments by offering teachers and principals the kind of professional development that is still totally absent from their training programs, more and more standardized testing will represent even more wasted money. If assessment is not working effectively for day-to-day needs in the classroom, centralized standardized testing represents wasted effort and money.

Richard J. Stiggins, Director
Assessment Training Institute

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Roadblocks: Lead-footed tradition slows the embrace of authentic assessment. Rightly or wrongly, many adults, supported by unremittingly negative press coverage of the schools, believe that what they experienced in school was "good" and that proposals for change represent an assault on the "quality" they knew when they were students. Individuals subscribing to this perspective are particularly suspicious of reform efforts that make school-to-school comparison more difficult. Clearly standardized test results, that boil down student performances to a few numbers, are easy to report. Despite a rich measurement literature decrying the use of such gross summary judgments to make broad qualitative statements about individual school programs, many citizens believe that is exactly what standardized tests can do. Authentic assessment is so time-consuming that large numbers of measures can be taken only on a sample of the total school population. The general public is going to have an extremely difficult time understanding why the "tried and true" practice of administering standardized tests to every student should be abandoned for this "untested" new system. The most likely scenario, from a political perspective, is that information generated from some standardized measures will have to be provided as a "political price" the public will exact for authorizing the use of some authentic assessment approaches.

Feasibility: Authentic assessment at the national level will be feasible only when the public is convinced that assessment of a sample of the student population will suffice. Time and resources simply will not allow for large numbers of authentic assessments of all students. A public conditioned to standardized test score averages based on performances of the total population of students may not be enthusiastic about a wholesale change to authentic assessment.

David G. Armstrong
Texas A&M University

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Roadblocks: A major roadblock is task specificity, which means that how an individual performs depends heavily on the specific task that is administered. It follows that valid assessment requires the use of many tasks, which leads to a heavy use of resources.

Feasibility: Yes, especially when the assessment is of groups or programs rather than of individuals.

Jason Millman
Cornell University

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UPDATE: THE 1995 MWERA ANNUAL MEETING

Sharon McNeely, Program Chair
Vice-President, M-WERA

The 1995 M-WERA Annual Meeting program, set for October 11-14, is starting to take shape. The dealine for the Call for Papers is May 7. In the meantime, the Division Co-Chairs and I have been planning some invited speakers and some workshops.

Some of the planned highlights include:

* Wednesday late p.m. pre-conference "debate" on the crisis in education featuring Dr. David Berliner and others.
* Opening keynote address by Dr. David Berliner on manufactured crisis in education and what we have learned from research in the schools.
* Presidential Address by Dr. Thomas Andre on technology, gender, and the thinking school.
* Friday luncheon address by Dr. Gerald Bracey on new directions for schools to deal with "crisis".
* Workshop and address by Dr. Barbara McCombs on implementing learner-centered principles in the classroom.
* Address by Dr. Barbara Shade on developing culturally responsible teachers.
* Address by Dr. Nancy Zimpher on developing professional relationships between schools and universities.
* Professional development workshops on obtaining federal monies for educational support.
* Exhibits by various publishing companies

All educators, educational researchers, graduate students, educational administrators, and others associated with education are encouraged to submit papers. These will be blind reviewed. Division Co-Chairs are identifying reviewers and are planning their programs. The Division Co-Chairs are:

A: Will Place and Larry McNeal
B: Virginia Goodman and Jay Thompson
C: Jennifer Fager and Steve Benton
D: Laura Barnes and Susan Holmes
E: Sharon Paulson and Paula Britton
F: Louise Fleming and Michael Penrod
G: Deborah Bainer and Clara New
H: Isadore Newman and John Fraas
I: Gene Kramer and Richard M. Smith
J: Wayne Van Zomeren and Gloria Sandoval
K: Carmen Giebelhaus and Mary Bendixon-Noe

The workshops for professional development are being coordinated by Linda Morrow. Cecil Smith and Jay Adler are developing workshops for teachers and school administrators. Eddie Glenn is coordinating special needs issues of our participants. Connie Bohman is coordinating our New Member welcome. Adria Karle-Weiss is the Social Director. Exhibits are being coordinated by Nancy Fellows and Ellen Fiedler.

The meeting will be held at the Bismarck Hotel in beautiful, windy, downtown Chicago. The hotel is currently being remodelled, and some guests will enjoy newly designed rooms and new furniture. The hotel has promised an office center for our conference use, and some other nice amenities. The city has expanded train service from Midway Airport to downtown, making the expanded Midway an additional option for getting to downtown Chicago.

If you have some program suggestions or questions, please contact me directly at (312) 794-2788, or email at: usmcneel@uxa.ecn.bgu.edu. I look forward to seeing you in October.

PRESENTATION PROPOSAL COVER SHEET
1995 MWERA ANNUAL MEETING
October 11-14, 1995, Chicago

Complete this form. Include three copies with your submission.

1. Type of presentation:
   - ____Paper: 15 minutes
   - ____Poster
   - ____Symposia
   - ____Discussion Group
   - ____Workshop: 90 minutes
   - ____Workshop: 3 hours
   - ____Alternative session:_____

2. Primary Division for peer-review: _____

3. Title of presentation:_____
   _____

4. Name of Principal Presenter/Organizer:_____
   _____Degree:_____
   Affiliation_____

5. Co-authors, Symposia members, etc._____
   _____
   _____
   _____

6. Have you ever presented a similar paper at another professional meeting?
   ____No ____Yes If so, how will this differ?_____

7. Is this a student presentation? ____No ____Yes

8. Are you a MWERA member? ____No ____Yes
   Please note that all presenters must be current members of MWERA at the time of presentation and must pay registration for the Annual Meeting.

9. Permission is given to MWERA to record my/our presentation and to make it available for sale for the benefit of MWERA. Initial here is you wish to **withhold** this permission._____

I hereby certify that if this proposal is accepted and placed on the Annual Meeting Program, I will join MWERA, register for the Annual Meeting, appear, and deliver the presentation. If I am unable to attend, I will make arrangements for the presentation to be made on my behalf.

Signature:_____Date:_____

Mail this no later than May 7, 1995, to: Sharon McNeely, Ph.D., MWERA Program Chair, P.O. Box 34421, Chicago, IL 60634

Checklist: Did you enclose:
- ____3 copies of this proposal cover sheet
- ____6 copies of the summary
- ____3 copies of the abstract
- ____1 copy of abstract with author information
- ____3 self-addressed, stamped envelopes
- ____3 author information sheets

MWERA Election Results

1995 Ballot

The Secretary of the Association, who also serves as Chair of the Tellers' Committee, reported the results of the Spring '95 membership mail ballot as follows:

Vice-President:	Kim K. Metcalf, Indiana University
Member-At-Large:	Linda Bakken, Wichita State University
Association Council:	Deborah L. Bainer, OSU-Mansfield Linda S. Behar, University of Florida Mary Ann Flowers, Cleveland State University Jeffrey B. Hecht, Illinois State University Daniel J. Mueller, Indiana University Sarah E. Peterson, Northern Illinois University Bruce G. Rogers, University of Northern Iowa Joan S. Timm, University of Wisconsin-Oshkosh

The above winners assume office as of October 1995. VP Metcalf is responsible for the 1996 MWERA Conference. He will move on to President-Elect, President, and Past-President in subsequent years. The other officers serve two-year terms.
We welcome these dedicated members of MWERA and congratulate them on their success as elected officers.

The Mid-Western Educational Research Association (MWERA) is a nonprofit organization of professional education researchers primarily from states and provinces located in the midwestern region of the United States and Canada. Membership is open to faculty, students, and administrators from any university, college, and school. College students engaged in educational research are especially encouraged to join as members. Also, education researchers in business and industry, as well as those in national, state, local and private agencies and organizations are welcome. The Association promotes and disseminates educational research through its publications, its scholarship program, and its Annual Meeting.

The 1995 dues of $10 for student and $18 for professional membership include a subscription to the *Mid-Western Educational Researcher* and a reduced registration fee for the Annual Meeting. *Address membership correspondence to*: Jean W. Pierce, Dept. EPCSE, Northern Illinois University, DeKalb, IL 60115, phone: 815-753-8470.

MWERA Membership Application

Name (first, middle initial, last) _____

Mailing address _____

City _____ State _____ Zip _____

Home phone ( ) _____ Office phone ( ) _____

Highest degree: _____ Area of specialization: _____

Instituition/Employer: _____

MWERA division preferences: _____

E-mail address: _____

AERA member? _____ Division(s): _____

If applying for student membership, please include a copy of your student ID.

MID-WESTERN EDUCATIONAL RESEARCHER

Call for Proposals for Editor(s)

The Mid-Western Educational Researcher is the official publication of the Mid-Western Educational Research Association (MWERA). The journal contains research based articles, features, interviews, and news of the Association, and it is published quarterly with one issue serving as the annual meeting program. The editorship of the journal is a three year term appointed by the Association President. Although the new editor(s) will not begin the term until the Winter, 1997 issue, a great deal of preparation is necessary to produce the first issue, therefore an appointment one year prior to the first issue is desirable.

Those interested should send a cover letter outlining the following:

1. Name(s) and qualifications of those included in the proposal (emphasize skills related to the editorship). Teams that would include co-editorships or associate editors are welcome, however please include a description of anticipated roles and responsibilities of each person. Attach complete vitae for all those involved.
2. Any institutional support that would facilitate the editor(s) efforts (printing, mailing, and related costs of the journal are paid for by MWERA).
3. Strengths and weaknesses of current journal and possible ideas for the future.

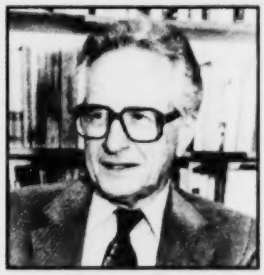
Mail proposals to:
Greg Marchant
MWERA President-Elect
Educational Psychology
Ball State University
Muncie, IN 47306

Although the editorship is not a paid position, it offers a creative professional opportunity with high visibility. The new editor(s) will continue to shape the future of a journal that is receiving national recognition.

Proposals and supporting materials must be received by October 1, 1995

Setting An Agenda for Educational Renewal: A Conversation with John Goodlad, University of Washington

Mary R. Sudzina, The University of Dayton



John Goodlad is Professor of Education and Director of the Center for Educational Renewal at the University of Washington, and President, Institute for Educational Inquiry, in Seattle. He received the 1984 Outstanding Book of the Year Award from AERA for *A Place Called School*, the 1990 Outstanding Writing Award from AACTE for *Teachers for Our Nation's Schools*, and the 1993 AERA Award for Distinguished Contributions to Educational Research.

MS- In your latest book, *Educational Renewal: Better Teachers, Better Schools*, teacher education is conceptualized as occurring in a Center of Pedagogy, involving teachers in schools of arts and sciences, schools of education, and school districts. How do you envision these groups, whose relationships have often been adversarial, working together?

JG- In our case, we have an agenda [See Table 1]. So they are not coming together, wondering why they are coming together. They are coming together to address the agenda and the point I make is, if you just say, "Let's come together and talk", it's probably not going to go anywhere. You've got to come together and say, "All right, there's a part of this agenda that really involves us. Let's talk about it."

So you've got to get them around the table together, otherwise they keep postponing the conversation. The agenda is really that the university role in teacher education involves the general education of the teacher in the arts and sciences as well as in the college of education and partner schools.

MS- So, what you are proposing is a well-rounded, well-educated future teacher.

JG- Sure. But I still think that you need something very specific to talk about. For example, we found that my book, *Teachers For Our Nation's Schools*, stirred up a lot of people who focused on the research and [the attitude was], "OK, another research report". *Educational Renewal* is different because the role of the various parties is spelled out there.

MS- In addition to a lack of a specific agenda, do you think many well-intended reform efforts fall by the wayside because the process is so laborious?

JG- You cannot do this by university rules. You can't do this at faculty meetings. You've got to get task forces, you've got to say what it is you're going to come out with, where you're going to be three months from now, and what we have to do to be there.

Some of us at the University of Washington decided that our program for preparing principals was not good enough. We said, let's design a new one. Let's design it so we can have a cohort group here this summer. It was already February. So we simply went down the list. We want a group here by a certain date in this summer. When do we have to recruit them? And we backed up from that and determined what the tasks were and then said we've got to meet once a week. And then we said, rather than all struggling with our schedules, this week we're meeting Monday. Next week, it's Tuesday. The next week it's Wednesday. The next week it's Thursday. Monday, Tuesday, Wednesday, Thursday. You can't come? It's your responsibility to find out what went on. There was always a core team that carried the work forward. But if we said let's do it at the faculty meeting, it would take us three years. We did it in three months.

MS- John, you're very much in favor of people taking action. You suggest that if we wait for Ed Schools to agree on what should be done, we could be waiting forever. You advocate trying new ideas, even if they don't work out, rather than arguing about whether we ought to try something new or not.

JG- We want somehow or other to turn everything into, "Let's see if we can agree on the fundamental principles." You don't all have to agree on fundamental principles to decide to take action. You've got to get

those folks out in the schools involved. So the thing to say, and this has face validity, "Sending our students out all over the place as student teachers doesn't make any sense. We're going to place them as cohorts in partner schools." You have to argue about that forever? Go do it.

MS- A thread that runs through all of your writing is that teaching is a moral enterprise. How do we gain the trust, or how do we involve school people in legitimate educational partnerships? We really can't mandate sweeping reforms.

JG- Too often people in the university want to talk, make decisions, and then say, "We'll go tell these school people what we've decided." You've got to involve the school people in the conversation from the beginning. Get the people around the table who ultimately are going to suffer the consequences of the decisions to be made.

If they get involved in a discussion about the mission of our teacher education program, they'll fall into discussing the moral dimensions as easily as the university people will. We have 18 people in a cohort group in our leadership program -- professors of education, professors in the arts and sciences, and people in the schools. After the third day, you can't tell who's who.

MS- You are seen by many as a champion of public education. Do you agree with that assessment?

JG- Well, I'd be delighted to be so designated because I do believe very strongly in public education as a basis for our society, and public education is threatened right now. Very seriously threatened, because many people don't understand its public purpose. They think it's something for them.

MS- What do you mean?

JG- Well, let me throw out a little proposition to you. You pay taxes that support the roads, support the parks, provide water, provide sewage disposal, provide schools. Now, did anyone in your city ever claim that this part of this road is mine, it's private? Did anybody say this corner of the park is mine, it's private? Did anyone ever say I want to take my taxes back and have my own water system, my own sewage system? What do they do about the schools? I want the school to be my school, my private school, and I want my vouchers, my money back for my school. It's the only area in society where we do that. Not only that, you can't drive on those public roads that you paid for any old way you want to. You've got to observe green lights, red lights and a speed limit.

People think, however, they can do anything they want with their schools. They can send their kids or not send their kids. They can send them on time, they can send them to swear at the teacher or what not. We've got to have a compact with the people on the way to behave about their schools the same way they behave with their parks and their roads, and so on. If you want to take your child out, be my guest. But you can't take your taxes out. Your taxes serve the public purpose of schooling. That's why the householders in Massachusetts in the 17th century created public schools. They didn't need to because the householders were the wealthy folks. But they said, if we don't educate our people, we'll destroy our way of life.

Somebody who says, "I don't want to use the schools," should not have the choice of deciding I'm not going to pay my taxes for the schools. Our society has decided we want educated people, and we will always have some ignorant people who don't want all people to be educated. And, of course, citizens should play an active role in decisions about our schools.

MS- Do you think that government should intervene and support schools that have very low tax bases and are very impoverished? Do we have a moral responsibility?

JG- We have a moral responsibility. The trouble is, there are communities with better roads, better parks, better museums, better everything. So in New York City, the people pay about $7,000 per year per pupil. In Long Island communities, it's about $15,000 per pupil. Then you look at the educational differences. There are children who go through the New York and Chicago and Philadelphia schools who never have a full-time teacher. They just have a series of substitutes. There are people who go through and never have a fully-qualified teacher. That doesn't occur in affluent communities.

MS- But doesn't that conflict with what you just said?

JG- It creates unfinished business. So far we have not been able to provide equity and we are not in a mood right now as a nation to do it. I suppose that there always will be inequities but we cannot morally or economically afford inequities in regard to access to education.

MS- Do you think that educators are too entrenched in the current system to be effective change agents?

JG- Sure, they're entrenched, but there's no one else who can do it. There are always people who won't accept change. I want to come back to my point, and it's

very hard to get this across. There must be an agenda. People buy into that agenda. There are 19 propositions in our agenda. There are about 90 conditions that have to be in place. They agree to do that. That's what they are working on. To effect change, those involved must have a mission and an agenda.

MS- If you could synthesize your agenda to the three or four of the most important tenets, what would they be?

JG- You have to have all of them. They are a package. It's silly to think you can do it without all of them. There's a wonderful study out by an organization in New York. They studied four cities that had money, enthusiasm and the desire to change. They don't name them because it was a complete disaster. The people all sat down, they had money and they said what are we going to do? And after a few meetings they were fighting with one other. They never got anything done because they did not have an agenda.

There's not one successful education program in this country that doesn't have an agenda. Ted Sizer has an agenda. Jim Comer has an agenda. Howard Gardner has an agenda. Hank Levin has an agenda. We have an agenda. These are the only successful programs in the U.S. All of this other floundering around without an agenda is a waste of time.

MS- What do you think are the most overwhelming issues in education today? If you could change one thing about the current educational system, what would that be?

JG- The most overwhelming educational issue is a context; it's a social context in which we are living today in a democracy that has given us permission to be greedy, divisive, and selfish, and little of our leadership is telling us otherwise. That's a little harsh, maybe, but everything that was done for a period of time was really built around, "I'll get mine first, then I'll take care of my neighbor". That is the most serious thing because it is now invading the schools and it is very difficult for schools to achieve their public purpose when everybody views schools as their private domain, their private park, their private road, their private water system, their private sewage system. That is our major problem.

Related to that is the misbegotten idea that the success and failure of this country is directly related to our schools when some of the most schooled people in the U.S. have made the most stupid decisions. Did we fall behind Japan in the automobile industry because of our school system or because of the people running General Motors and Ford who went on building those big cars when it was obvious that the American people weren't buying them? It wasn't until the CEO's looked down at the parking lots of their own workers and saw more Japanese cars than American cars that they began to wake up. So, now we're building automobiles as good as the Japanese are.

Five or six years ago there was a survey of the American people, and the survey asked a couple of critical questions. One, "Which country is the number one economic power in the world?" Japan came out first. The second question: "Is this situation going to change in the foreseeable future?" No. They gave the same questionnaire last year. Which is the most powerful, potent economic force in the world? The United States. Is it going to remain so? Yes. Now, were there any newspaper headlines saying the schools must be good because now we have a good economic system and we believe in it? No, not one news headline.

So, the point is, that didn't have anything to do with anything. Test scores didn't go up much enough to affect anything. Whoever got the idea that SAT scores had anything whatsoever to do with economic competition? In the long, long run, uneducated people will do their work well, but a good society has good schools, not the other way around. I do not know one society that became good because of its schools. But I know lots of societies with good schools because they were good societies. That's the way we were, and now we are in very serious danger of becoming a not very nice society and we won't have good schools.

MS- Any last thoughts about the teaching profession?

JG- What differs teaching from every other profession in the world is that everything you have and know, you're giving away. It's the only profession that does that. You teach it, you give it away. The others are all practicing their techniques and skills on a patient or a car. With us, we're giving it away like we have all the time. So, you've got to recharge your battery. You've got to renew yourself all the time.

Education is really at the root of everything. People in education are the kind of people that I want to be associated with. I want to be thoughtful, I want to read, and I want to learn. I hope that you realize every morning when you wake up you can say, "I'm in the best job on earth."

Table 1

Nineteen Postulates Necessary for the Simultaneous Renewal of Schools and the Education of Educators

Postulate One. Programs for the education of the nation's educators must be viewed by the institutions offering them as a major responsibility to society and be adequately sup-

ported and promoted and vigorously advanced by the institution's top leadership.

Postulate Two. Programs for the education of educators must enjoy parity with other professional education programs, full legitimacy and institutional commitment, and rewards to faculty geared to the nature of the field.

Postulate Three. Programs for the education of educators must be autonomous and secure in their borders, with clear organizational identity, constancy of budget and personnel, and decision-making authority similar to that enjoyed by the major professional schools.

Postulate Four. There must exist a clearly identifiable group of academic and clinical faculty members for whom teacher education is the top priority; the group must be responsible and accountable for selecting diverse groups of students and monitoring their progress, planning and maintaining the full scope and sequence of the curriculum, continuously evaluating and improving programs, and facilitating the entry of graduates into teaching careers.

Postulate Five. The responsible group of academic and clinical faculty members described above must have a comprehensive understanding of the aims of education and the role of schools in our society and be fully committed to selecting and preparing teachers to assume the full range of educational responsibilities required.

Postulate Six. The responsible group of academic and clinical faculty members must seek out and select for a predetermined number of student places in the program those candidates who reveal an initial commitment to the moral, ethical, and enculturating responsibilities to be assumed, and to make clear to them that preparing for these responsibilities is central to this program.

Postulate Seven. Programs for the education of educators, whether elementary or secondary, must carry the responsibility to ensure that all candidates progressing through them possess or acquire the literacy and critical-thinking abilities associated with the concept of an educated person.

Postulate Eight. Programs for the education of educators must provide extensive opportunities for future teachers to move beyond being students of organized knowledge to become teachers who inquire into both knowledge and its teaching.

Postulate Nine. Programs for the eduction of educators must be characterized by a socialization process through which candidates transcend their self-oriented student preoccupations to become more other-oriented in identifying with a culture of teaching.

Postulate Ten. Programs for the education of educators must be characterized in all respects by the conditions for learning that future teachers are to establish in their own schools and classrooms.

Postulate Eleven. Programs for the education of educators must be conducted in such a way that future teachers inquire into the nature of teaching and schooling and assume that they will do so as a natural aspect of their careers.

Postulate Twelve. Programs for the education of educators must involve future teachers in the issues and dilemmas that emerge out of the never-ending tension between the rights and interests of individual parents and interest groups and the role of schools in transcending parochialism and advancing community in a democratic society.

Postulate Thirteen. Programs for the education of educators must be infused with understanding of and commitment to the moral obligation of teachers to ensure equitable access to and engagement in the best possible K-12 education for all children and youths.

Postulate Fourteen. Programs for the education of educators must involve future teachers not only in understanding schools as they are but in alternatives, the assumptions underlying alternatives, and how to effect needed changes in school organization, pupil grouping, curriculum, and more.

Postulate Fifteen. Programs for the education of educators must assure for each candidate the availability of a wide array of laboratory settings for simulation, observation, hands-on experiences, and exemplary schools for internships and residencies; they must admit no more students to their program than can be assured these quality experiences.

Postulate Sixteen. Programs for the education of educators must engage future teachers in the problems and dilemmas arising out of the inevitable conflicts and incongruities between what is perceived to work in practice and the research and theory supporting other options.

Postulate Seventeen.
Programs for the education of educators must establish linkages with graduates for the purposes to both evaluating and revising these programs and easing the critical early years of transition and teaching.

Postulate Eighteen.
Programs for the education of educators require a regulatory context with respect to licensing, certifying, and accrediting that ensures at all times the presence of the necessary conditions embraced by the seventeen preceding postulates.

Postulate Nineteen. Programs for the education of educators must compete in an arena that rewards efforts to continuously improve on the conditions embedded in all of the postulates and tolerates no shortcuts intended to ensure a supply of teachers.

Center for Educational Renewal
University of Washington
Seattle, WA 98195

An Investigation of Variables Related to Student Achievement

C. R. Bulach, West Georgia College
Bobby Malone, Murray State University
Christy Castleman, Murray State University

Abstract

The purpose of this research was to investigate the relationship of selected variables to student achievement. Data on instructional leadership, involvement, order, instruction, expectation, collaboration, environment, socioeconomic status level, and student achievement were collected from 27 schools. The instrumentation used to collect the data were the Tennessee School Climate Inventory (which yields a school climate score), the California Test of Basic Skills (CTBS), and a student free and reduced lunch count.

A significant positive correlation ($r(25) = .52$, $p < .01$) was found between school climate and student achievement and between student achievement and the socioeconomic status of students ($r(25) = .41$, $p < .05$). A significant positive correlation ($r(25) = .49$, $p < .01$) was also found between the involvement subscale of the climate instrument and student achievement. Of all the variables investigated, it would appear that the involvement of parents and the community has the strongest relationship to student achievement.

We concluded that school climate scores can be just as helpful as the socioeconomic status of students in predicting student achievement. Further, high achievement is possible in elementary schools that have a large number of students of low socioeconomic status. Finally, our data support the notion that schools with a high proportion of students of low socioeconomic status can have a healthy school climate.

The cause for varying levels of achievement in schools has frequently been the subject of investigation. The Coleman (1966) report, which stated that the best predictor of student achievement is the socioeconomic status of the parents, led to a flurry of investigations on student achievement. The effective schools research and school climate research came on the heels of the Coleman report because researchers refused to accept its findings. Of course, not everyone agreed with the results or interpretations of this research. Houlihan (1988) believed that researchers have overanalyzed and victimized schools by ridiculous statistical interpretation. He stated, "Statistical data have been carried to the ultimate in silliness" (p. 10). Many educators would agree with Houlihan, particularly when achievement scores are involved. Nevertheless, the push goes on to recognize students, teachers, administrators, and schools for outstanding achievement. It would be helpful if there were a better indicator than the socioeconomic status of students to predict in advance which schools would be likely to have high or low achievement. The socioeconomic status of students is extremely difficult to change whereas another variable might not be.

The purpose of this research was to investigate any relationships which might exist between student achievement and possible predictor variables. Predictor variables investigated were the following: effective school variables, school climate variables, and the socioeconomic status of students. A second purpose was to investigate which variables are the most important for student achievement.

In order to provide a theoretical framework for this project, the authors reviewed the research on effective schools and school climate. The literature review is a summary of findings in these two areas because research in the two fields is so extensive. The authors will address the research on the relationship of socioeconomic status to achievement first, and then follow with the research on effective schools and school climate. Hopefully, this will give the reader a better understanding of those factors which have a relationship with achievement.

The Coleman (1966) report was a landmark study which documented that the socioeconomic status of students is the best predictor of student achievement. The research of Metz (1988) and Chubb and Moe (1990) also found that the socioeconomic status of students is important for achievement. Chubb and Moe's research was based on data gathered from 20,000 students and 500 schools nationwide. Of significance was the finding that the socioeconomic status of students and the organization of the school in terms of goals, leadership, personnel, and practice, had an equal influence on student achievement.

The effective schools research, as reviewed in Matluck (1987), Cruickshank (1990), and Bliss, et al. (1991), identified many variables which are relevant for student achievement. While there are differences in the variables depending on the researcher, there is agreement on a core group of variables which are relevant for student achievement. They are: orderly climate, leadership, expectations,

frequent monitoring of instruction or assessment, parent and community involvement, and instruction. Other variables which researchers cite as important for achievement are the following: site-based management, staff stability, staff development, collaboration, time-on-task, and sense of mission.

Critics of the effective schools research stated that most of the data collected was from poor urban schools and students of low socioeconomic status and that the research was methodologically flawed (Bliss, et al., 1991; Firestone, 1991; Good & Brophy, 1986; Purkey& Smith, 1983). Another critic (Matluck, 1987) suggested that the definition of terms was a flaw in the research because methodologically similar studies used the same terms, but lacked agreement on the meaning of the terms, e.g. climate, leadership, and high expectations. Despite this criticism, there is considerable support for the premise that effective schools improve student achievement.

Acknowledgement of the role of school climate in improving student achievement has also received widespread support (Agnew, 1981; Anderson, 1982; Brookover, et al., 1977; Howe, 1985; Keefe, et al., 1985; Lezotte, Hathaway & Miller, 1980; Montoya, 1990; Parades, 1991; Stickard, et al., 1986; Strong & Jones, 1991). The works of Brookover, et al. (1979), Rutter (1981), Rutter, et al. (1979), and Wynne (1980, cited in Purkey & Smith, 1983) were used to justify the statement that a school's climate influences a student's chance for success. Ralph and Fennessey (1983), in discussing Brookover's (1979) work, stated that school climate variables may be the effect or the cause of changes in other variables, e.g. achievement. Hoyle, English, and Steffy (1985) stated, "School climate may be one of the most important ingredients of a successful instructional program. Without a climate that creates a harmonious and well-functioning school, a high degree of academic achievement is difficult, if not downright impossible to obtain" (p.15). Finally, Sweeney (1988) wrote, "A winning school climate provides the very foundation for a sound educational program. When the climate is right, people are inspired to do their best. Teachers and students . . . do what needs to be done to stimulate learning. Achievement generally rises" (p. 1).

Several studies did not show a significant positive relationship between climate and achievement. Culpepper (1993) gathered data from 698 teachers in 41 elementary schools. She used the school as the unit of analysis and found no significant relationships between climate and reading and math achievement. Montoya (1990) collected data from two schools and eight classes of sixth graders. She also found no relationship with climate and achievement.

While there is a great deal of agreement that school climate is important for achievement, critics state that there is very little agreement on the definition of school climate. Arter (1989) wrote, "As with many other concepts in education, there is no unanimous agreement as to exactly what constitutes school or classroom climate" (p. 2). Stronge and Jones (1991) stated, "School climate is a term which we tend to intuitively understand, but one for which there is no single accepted definition" (p.41). In the effective schools research, school climate is usually called a safe orderly environment. In Brookover, et al. (1979), school climate refers to pupil efficacy and pupils' and principals' perceptions of others' behavior. Hoyle, et al. (1985) defined climate as "the environment of the school as perceived by its students, staff, and patrons. It is the school's 'personality'" (p. 15). Lezotte, et al. (1980) included physical attributes such as heat, light, and noise; psychological attributes such as satisfaction, morale, trust, openness, and cooperation; and institutional attributes such as norms, beliefs, and attitudes. Sergiovanni and Starratt (1993) stated that climate can be viewed as "the enduring characteristics which describe the psychological character of a particular school" (p.82).

Ellis (1988) stated that school climate consists of subjective and objective indicators which give an overall feel for a school. Perhaps Lezotte and Ellis are talking about the same thing. Are psychological, physical, and institutional attributes also subjective and objective indicators? To resolve this question, the authors developed a definition which incorporates many of the above ideas.

Definition

The definition of school climate that was used for the purpose of this research is "the perception someone has about the psychological and institutional attributes of an organization or those psychological and institutional attributes which give an organization its personality." The physical attributes of school climate were not included because there is little evidence to show that they affect school climate.

In order to operationalize school climate, the Tennessee School Climate Inventory (TSCI) (Butler and Alberg, 1991) was chosen. It has seven subscales which measure order, leadership, environment, involvement, instruction, expectations, and collaboration. Each subscale consists of descriptions of seven behaviors which make up that subscale. The TSCI was chosen as the measure of school climate because it provides data on five of the six variables frequently identified in the effective school research. These variables are the following: order, leadership, instruction, involvement, and expectation. The other two variables of the TSCI are environment and collaboration. These variables are more frequently found in the climate domain. Both the effective schools and school climate domains provide research support which shows that they are important for student achievement. Consequently, it was believed by the authors that an instrument which measured both domains to some extent would prove useful for this research.

Definitions of the variables are as follows. The first five are effective schools variables and tend to measure the institutional attributes of school climate. Environment and collaboration tend to measure the psychological attributes of school climate.

Order: the extent to which the environment is ordered and appropriate behaviors are present.

Leadership: the extent to which the administration provides instructional leadership.

Involvement: the extent to which parents and the community are involved in the school.

Instruction: the extent to which the instructional program is developed and implemented.

Expectations: the extent to which students are expected to learn and to be responsible.

Environment: the extent to which a positive learning environment exists.

Collaboration: the extent to which the administration, faculty, and students cooperate and participate in problem-solving.

Hypotheses

The literature review of effective schools and climate research shows that a number of variables are important for student achievement. The TSCI measures much of the domain cited as important for student achievement with the exception of students' socioeconomic status. Consequently, the hypotheses were as follows:

1. There is a significant positive relationship between school climate scores as measured by the TSCI and student achievement as measured by the California Test of Basic Skills (CTBS).

2. There is a significant positive relationship between the socioeconomic status of students and student achievement.

Because both socioeconomic status and school climate have been shown to have an effect on student achievement, an additional hypothesis was the following:

3. There is a significant positive relationship between the socioeconomic status of a school's students and the school's climate score.

Procedures

Subjects

Six hundred and eleven (611) teachers and principals from twenty-seven elementary schools in Western Kentucky were involved in the study. The principals of all of the schools volunteered to participate in the study with the condition that they would be provided a profile of their school. The schools varied in size ranging from a low of 93 pupils to a high of 700 pupils. The populations of the schools were primarily Caucasian of upper-lower to lower-middle class. Overall the sample for this study is representative of the schools in Kentucky and would be representative of most populations except for large urban schools and schools with a high proportion of minority students.

Instrumentation

The TSCI was the instrument selected for this study based on the reasons cited earlier. Reliability data on the TSCI using the Cronbach alpha or measure of rationale equivalence was an average of +.80 for the seven subscales (Butler & Alberg, 1991).

The TSCI has seven subscales which measure order, leadership, environment, involvement, instruction, expectations, and collaboration. Each subscale has seven behaviors for a total of 49 items or behaviors which are measured. It measures the same domain as the effective schools research except for frequent monitoring of instruction and student time-on-task. It also measures collaboration and environment, two variables more commonly found in the climate domain.

In addition to the climate data, data were also collected on achievement using the California Test of Basic Skills (CTBS) and on the socioeconomic status (SES) of the students. The SES of students was determined by counting the number of students on free and reduced lunch. While this may not be the best measure of a student's socioeconomic status, it was within the scope of this study. Chubb et al. (1990) reported that parents' education and income were the most important socioeconomic variables for determining the performance of students. This study will only look at the income level as measured by free and reduced lunch counts. The failure to gather data on the education of the parents is a limitation of this study in terms of testing hypothesis 2.

The unit of analysis for climate, achievement, and the socioeconomic status of students was the school. The rationale for this decision was that as the climate score represented all of the respondents' opinions, i.e. the entire school, there would have to be a score for the entire school in the other areas as well. Thus there was one score for the whole school in each of these areas: school climate, each of the climate subscales, student achievement, and number of free and reduced lunches. The statistical technique used to analyze the data was the Pearson product moment correlation.

Results

The overall school climate scores were correlated with the achievement scores. The mean climate score was 25.3 with a standard deviation of 2.32. The mean achievement score was 59.54 with a standard deviation of .46. A positive correlation of +.517 was found between the school climate and student achievement scores. The correlation was significant at the .01 level. **Hypothesis 1 was supported.** There is a significant positive relationship between school climate and achievement.

The reduced and free lunch count, which served as a measure of the socioeconomic status of students for each school, ranged from a low of 14.3% of the students to a high of 70%. The mean free and reduced lunch count was 40.5% with a standard deviation of 12.98. There was a wide range of socioeconomic levels with most schools falling into the medium to low socioeconomic levels. A positive correlation of +.409 was found between student achievement and socioeconomic status. It was significant at the .05 level. **Hypothesis 2 was supported.** There is a significant positive relationship between the socioeconomic status of students and achievement.

A negative correlation of -.064 (not significant) was found between the overall school climate score and socioeconomic status. **Hypothesis 3 was not supported.** There is no relationship between school climate and the socioeconomic status of students.

Climate subscale scores for each of the schools were correlated with achievement scores. With 25 degrees of freedom, a correlation of +.38 is required at the .05 level of confidence, and .49 at the .01 level. Only two of the subscales were significantly correlated with achievement scores. The subscale titled "involvement" had a correlation of $r(25) = .49$, $p < .01$ and the subscale titled "instruction" had a correlation of $r(25) = .39$, $p < .05$.

Discussion

The finding that there is a significant positive relationship between achievement and school climate is encouraging. Even more encouraging is the fact that the relationship between school climate and achievement is stronger than the relationship between achievement and the socioeconomic status of the students. This is encouraging because school climate scores can be raised whereas the socioeconomic status of the students is difficult to change.

In related research, Benton and Bulach (1994) developed a school improvement plan designed to improve school climate subscale scores. The TSCI data were collected in October 1993, the improvement plan was implemented to address specific subscale weaknesses, and the TSCI was again administered in April 1994. A significant improvement in the collaboration ($p < .05$) and involvement ($p < .05$) subscales occurred. Collaboration and involvement were two areas of weakness in the overall climate of the school which were targeted in the school improvement plan. This provides support for the above statement that school climate scores can be improved.

The strongest correlation for the subscales with achievement was the involvement subscale ($r(25) = .49$, $p < .01$). This finding supports the research of Anderson (1994), Marcon (1993), and Snodgrass (1991). The importance of involving students, parents and the community in the school can not be overlooked as a significant factor related to student achievement. It also adds further support for the role of school-based decision-making and the feeling of community which Sergiovanni, et al. (1993) advocate in their latest book on supervision.

The involvement subscale was followed by the instruction subscale in terms of its relationship with achievement scores. The seven behaviors in this subscale deal with teaching and evaluation methodology. It follows that there should be a relationship between achievement and instruction if teachers actually exhibit the behaviors measured by this scale, e.g., use a variety of teaching strategies; sequence learning activities so students can experience success; develop higher-order thinking skills, etc. As a matter of fact, we expected this relationship to be the highest with achievement. The fact that it was not may be indicative of the fact that teachers say they do these things when that may not always be the case.

There was a surprise with the remaining subscales. While they are all positively correlated with achievement, we had expected the leadership subscale $r = .24$ to be much higher. This finding was somewhat disturbing because Bulach and Malone (1994) found a correlation of +.90 between scores on the leadership subscale and the overall climate score. This indicated that the principal is a strong force in the overall picture of school climate. The score on the leadership subscale should be an accurate predictor of the overall school climate score and a less accurate predictor of the school's achievement scores. That it did not happen in this study could be explained by the fact that the principals in Kentucky are currently leading a massive reform movement which could detract from instructional leadership, thereby causing the low correlation.

As in the studies of Coleman (1969), Metz (1988), and Chubb, et al. (1990), this research verified that the socioeconomic status of students is a factor in their achievement level. However, schools with a large number of low socioeconomic status students can achieve at high levels. As a matter of fact, the school in this study with the highest achievement scores had 43.7% of its students on free or reduced lunch. Of course the school with the highest percentage of free and reduced lunches also had the lowest achievement scores. The relationship is definitely there, but it is not as strong as once thought. Schools with students who have a low socioeconomic status can achieve at high levels. The reader needs to keep in mind that this research was done in elementary schools. Mayer and Jencks (1989) stated that little is known about the effect of SES on student achievement in the elementary schools. This research provides evidence that high achievement in elementary schools with low SES students is possible.

That may not be possible at the high school level. The work of Metz (1988) paints a very dismal picture of achievement levels in low SES high schools. She wrote

that students enter the 9th grade badly equipped to meet the demands of a high school curriculum and that they are deeply discouraged about their academic prospects. The work of Mayer and Jencks (1989) suggests otherwise. They state that the effect of SES on the achievement of high school students is small. However, based on teaching and administrative experience in inner-city and suburban schools in Cincinnati, OH, they believe that once the pattern of low academic achievement is set, it may be difficult to reverse even if school climate is good.

This raises another question. Does a healthy school climate lead to higher achievement, or Does high student achievement lead to a healthy school climate? The work of Metz would lead one to believe that achievement provides staff with intrinsic rewards which indirectly leads to a healthy school climate. Further, teachers in high SES schools work hard, receive a lot of support, and take pride and pleasure in their students' progress. The question raised could very well be one of the "chicken or egg syndrome." Just as you can't have an egg without a chicken or vice versa, you can't have achievement without a healthy climate, or a healthy climate without student achievement.

Perhaps the finding that there is no relationship between school climate scores and the socioeconomic status of the school's students can shed some light on this issue. Since there is a relationship between climate and achievement and none between climate and SES, it is possible that climate makes an independent contribution to student achievement. Longitudinal research focusing on school improvement plans to improve school climate variables might be one way for determining which school climate variables have the most effect on student achievement.

There are those who might say that it is difficult to improve school climate in schools where you have a large percentage of low SES students, e.g., to get parents involved, maintain high expectations, establish a safe orderly environment, etc. These are all indicators of a healthy school climate, and while it may be more difficult in a school with a high percentage of low SES students, it can be done.

Summary and Conclusions

This research has continued the investigation on indicators of effective schools, and it has combined that area of research with the research on school climate. This study made the following contributions to these areas of research:

- a research instrument which collects data on both effective schools and climate domains was presented;
- evidence was provided to establish that the socioeconomic status of students need not be the most important variable in determining student achievement level;
- evidence was provided that high achievement is possible in elementary schools which have low SES levels.

Additionally, the data suggest that school climate makes an independent contribution to student achievement levels over and above the socioeconomic status of students. Because school climate scores can be raised, this is very encouraging for further research in this area. The authors believe that parent and community involvement and the instructional habits of teachers have the strongest relationship with achievement.

APPENDIX A

Building#	Achievement Score	Climate Score	%On Free & Reduced Lunch
27	73.6	28.48	43.7
3	70.3	25.7	38.5
23	66.4	24.31	21.6
24	66	24.2	14.3
22	65.2	25.46	29.4
7	62.4	27.45	29.8
1	62.3	27.7	56.2
25	61.8	28.44	29.4
2	61.4	27.65	43.9
26	61.3	24.74	42.8
19	60.7	24.45	26.5
6	60.5	28.06	47.5
20	58.7	23	56.6
21	58.2	25.98	27.2
15	57.9	23.86	68.3
18	57.5	26.23	44.1
17	57.3	27.25	56
5	57.1	25.73	33.3
9	57.1	26.56	36.7
14	56.6	23.48	36.9
10	56.4	23.6	31.5
16	56	21.85	41
8	55.1	22.27	38.8
13	53.9	24.79	37.6
11	53.5	18.24	40.7
12	53.4	23.22	51.4
4	47	23.02	70
MEAN	59.54	25.03	40.51
SD	.46	2.32	12.98

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MID-WESTERN EDUCATIONAL RESEARCH ASSOCIATION

Call for Nominations to Slate of Officers for MWERA Elections 1996

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- Nominees must be current members of MWERA.
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Book Review[1]

Carmen Montecinos, University of Northern Iowa

Faltis, Christian J. (1993). *Joinfostering: Adapting Teaching Strategies for the Multilingual Classroom.* New York: Macmillan Publishing Company. 179 pp. ISBN No 0-675-21326-6 (paper).

Imagine that you are the proprietor of the only meat store in a neighborhood that from one day to the next went from being predominantly Polish-Catholic to predominantly Jewish. Over the last twenty years you learned that pork-based products were best sellers among those who patronized your store. Currently, you carry mostly pork products. After the population shifts, however, it only takes you a few days to figure out that there is a sharp decline is your sales. If you wanted to increase your sales by doing business with the Jewish community, what would be the logical thing to do? Your best alternative would be to learn about the dietary preferences of your new costumers and tailor your products to meet their needs. You could, of course, insist on stocking mostly pork products and advertise heavily to try to change your new costumers' dietary rules. This latter choice will certainly not only make Jewish people feel unwelcome in your store but also lead you to bankruptcy.

In the United States, teachers and schools are facing a situation analogous to the one encountered by the meat grocer described above. It is a well-known fact that the linguistic and demographic characteristics of the recipients of school services are rapidly changing and so are the educational needs that teachers must fulfill. Unfortunately, the high attrition and underachievement rates among ethnic minorities suggest that, unlike the grocer who wants to stay in business and changes the merchandise to meet the needs of a new ethnic group, too many teachers insist on delivering content and pedagogy in traditional ways.

In this book, Christian Faltis clearly articulates why educators who insist on conducting, to use Sleeter and Grant's term (1993), "business as usual" are condemning the social institution of school to moral bankruptcy. Schools that fail to account for the needs of second-language learners of English ("conservatively projected to reach 3.5 million by the year 2000", p. 6) will not fulfill their fundamental role of helping materialize traditional democratic principles for all the children that they are entrusted with by parents and society at large. Through a description of a pedagogical approach he labels Joinfostering, Faltis provides educators a framework for instruction that refashions traditional all-English classrooms to meet the needs of second-language learners.

Faltis notes that Joinfostering is not to be understood as a set of techniques. Instead, Joinfostering is a commitment to creating classroom environments that provide full, equitable access and integration for second-language students and their parents, regardless of their level of English proficiency. Taking a Vygotskian perspective on cognitive development, he notes the importance of the social context in learning and argues for the development of classroom practices that give primacy to two-way communicative exchanges that support reciprocal talk to foster self-regulated learning.

In seven chapters, numerous examples and activities are provided to assist the reader to translate this pedagogical framework into classroom practice. The first chapter describes language and literacy socialization. To illustrate how discontinuities between a child's home and school life increase the likelihood of academic failure, Faltis contrasts literacy practices in mainstream schools, Mexican-American, and Chinese- American homes.

Faltis advocates that creating a classroom that includes second-language learners, necessitates teachers who are knowledgeable in four areas. First, teachers need to be aware of the various bilingual education programs that their second- language students might have experienced. Second, teachers need to know about alternative physical and social classroom arrangements that inhibit or enhance social interaction among diverse students as well as between teachers and their students. Third, the regular classroom teachers who serve second-language learners must understand the principles governing the acquisition of a second language and know how to incorporate these into their instructional repertoire.

Chapter Four provides concrete examples of how teachers can integrate language and content instruction in the context of teacher-led whole-class instruction. Chapter Five focuses on ways of integrating children at different levels of English proficiency in the context of small-group instruction. At this point Faltis introduces, in a fairly accessible language, Vygotskian principles to provide the theoretical rationale for the practices he has recommended so far. Chapter Six centers on the crucial, and often elusive, home-school link. Drawing from the work of D. Pettit, T. Rasinski, and A. Fredericks, Faltis describes a detailed four-level sequential approach for fostering parental involvement in their children's schooling. Chapter Seven provides a comprehensive summary of Joinfostering and contrasts it to Jim Cummins' framework for empowering minority students. Multiculturalism is premised on the belief that all pedagogy is culturally and historically constructed and, therefore, potentially exclusionary. From this perspective, all pedagogy must be critically scrutinized to uncover the voices

[1] Dennis W. Leitner, *Southern Illinois University*, served as Feature Editor responsible for soliciting and coordinating this Book Review for *MWER*.

that it legitimizes as well as the voices that are silenced. It would have been very illustrative if Faltis had helped teachers explore ways in which the approach he suggests can create cultural discontinuities for some children. In this way, he could have further modeled for teachers the process of interrogation that is intrinsic to the provision of equitable schooling. This analysis is necessary because second-language learners bring to their school cultural knowledge that goes beyond a different mother-tongue.

The principal importance of this book is its focus on empowering the regular classroom teacher, as opposed to the bilingual teacher, to meet the "social, communicative, and educational needs of both native English-speaking and second- language learners of English." (p. 3). Faltis constantly reminds the reader that the academic failure of mainstreamed second-language learners is not the inevitable outcome of these students' limited English proficiency. Teachers, he states, "can and must change the existing social organization of their classrooms to create a variety of meaningful and culturally appropriate learning environments." (p. 24).

This book is a much needed resource to complement the "culture-blind" approach of too many traditional methods courses as well as educational psychology courses in an undergraduate teacher preparation program. The pedagogical framework exemplified by Faltis makes it clear that we currently have teaching technologies that make it inexcusable and morally wrong for teachers to refuse to restock their instructional repertoire with approaches that nurture all children, not just those who have mainstreamed learning preferences.

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"Teachers Meet Researchers" is a new program from the Mid-Western Educational Research Association. MWERA's an affiliate of the American Educational Research Association and is its 4th largest affiliate with over 600 members. At its annual convention in Chicago at the Bismarck Hotel, over 100 papers are presented as well as having guest speakers, workshops, and discussion groups. If you are interested in doing research in your classroom in PARTNERSHIP with a college professor, send your name, school, area of interest(s), subject(s), grade level(s) taught, and address to Jay Adler, 405 West Main Street, Cary, IL 60013. This information will be published in the official journal of MWERA. An interested researcher will then contact you. This is a wonderful opportunity to make a real contribution to the advancement of educational knowledge and grow personally and professionally at the same time.

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Northeastern Illinois University, Chicago, IL

SPECIAL PROGRAM ISSUE

October 11-14, 1995

NEW HOTEL AND CONFERENCE REGISTRATION DEADLINES: SEPTEMBER 25

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SALUTATIONS! Here it is, your program, your annual meeting, your excuse to come to Chicago and network, learn, share and compare, socialize, and dare I say it, shop (but not until Saturday afternoon)! Over half of our membership, and many people we hope will become members, will be joining us for this event. Our *members* who keep coming back year after year tell us that they enjoy the informal ways that they can share with others, meet well-known leaders in our field face-to-face, and come to a place where theories, ideologies, and models can be developed, discussed and challenged in positive ways. As in previous years, we anticipate many *graduate* students will be joining us for this conference. I hope that everyone will take the opportunities to welcome them, and facilitate their interactions and involvements with us. As in previous years, the *publishers* who exhibit with us have generously agreed to donate books for our graduate students. Those will be available at the President's reception on Friday night.

A newer addition to this program is the series of *workshops* we have *both pre- and during-conference*. Our intent is to be able to share our expertise with others, and reach more of the *teachers, administrators*, and other *education-related professionals* we would like to have involved with the organization. I hope you will take the time to encourage them to participate!

Our program is made possible because so many people have so generously given of themselves. The invited speakers, and workshop presenters, are donating time and services at a fraction of their costs. Various publishers are sponsoring the speakers, the morning coffees, and giving other donations to us. The Division Chairs, and other program committee members have spent countless hours making tough decisions in organizing this program. We had many more submissions than we could possibly fit into a program a week long, much less three days. We had many proposals which overlapped, and hard choices had to be made about what to include and what not to include. The Board of Directors has been supportive and helpful with the tough decisions concerning conference issues. My Dean of Northeastern Illinois University's College of Education, Mike Carl, has been reorganizing the entire college. During this hectic time, he has supported the efforts is has taken to develop this program and provided various generous contributions to MWERA. Without everyone's support, this program would not be possible!

I have to **warn you that we have new deadlines this year. Make sure you pay careful attention to getting your hotel and conference registrations** in early. The hotel is under new management, and has already booked the rooms we did not reserve! Unlike previous years, where members could walk in and still get the reduced room rates, the rates this year are only guaranteed until **September 25**. Also unlike previous years, there will probably not be space available if you do not book early! As room rates are up, and rooms at the hotel have been rehabbed, some people may want to share rooms. Mary Sudzina has agreed to coordinate the room sharing. I encourage you to call her if you have a room to share, or are looking to find someone to share with. Her number is (513)229-3389.

The success of this program is now in your hands. I hope that you will **copy and distribute** the flyer pages to your schools, colleagues, anyone you think might be interested. I hope that you will **share** your program with others, and **ask them to join us**. I hope that I will have the opportunity to see you here.

Sharon McNeely, MWERA 1995 Program Chair

ON THE COVER

Northeastern Illinois University was founded in 1867 in Englewood as the Cook County Normal School. It then became the Chicago Teachers College. The campus at 5500 N. St. Louis Avenue opened in 1961. The main part of the commuter-campus is located in the northern part of the City of Chicago, in the most culturally-diverse zip code in the United States. NEIU's 10,000+ students come from diverse cultural and language backgrounds, usually do not speak English as their first language, are first-generation college, and typically are 8-10 years older than their counter-parts at residential schools. In addition to NEIU's main campus, there are three other outreach centers in the city.

Historically, NEIU's mission has been to serve in the preparation of teachers. In the past several years it has developed programs in other major areas, including business, arts and sciences, and non-traditional degree programs. Graduate studies have also been expanded, now accounting for almost 30% of all students. Graduate degrees are earned in the arts and sciences, business, and education. Graduate degrees in education can be earned in such diverse fields as counseling, educational administration, exercise science and cardiac rehabilitation, gifted education, human resource development, inner city studies education, reading, and special education.

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association, 4th* ed., 1994 (available from order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double-spaced (including quotations and references) on $8^1/_2$ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, etc., should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:
Ayres G. D'Costa, MWERA Editor
287 Arps Hall, 1945 N. High Street, The Ohio State University, Columbus, OH 43210

The *Mid-Western Educational Researcher* (ISSN 1056-3997) is published quarterly by the MidWestern Educational Research Association through The Ohio State University. Non-profit postage paid at Columbus, Ohio. POSTMASTER: Send address change to: Dr. Jean Pierce,, EPSCE, Northern Illinois Univ, DeKalb, IL 60115

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 8, No 3 Summer 1995 ISSN 1056-3997

Program Committee, Association Council, Board of Directors 2

Bismarck Hotel Registration Form (Sept. 25 deadline) 3

Proposal Reviewers 4

Conference Registration Form (Sept. 25 deadline) 5

General Information 6

Conference Events and Information 7

How to Get to the Conference 8

Pictures of Various Speakers 9

Conference Schedule:
- **Wednesday**
  - **Wednesday Matrix** 12
  - **Workshops listings** 13
  - **Evening Forum Flyer** 15
- **Thursday**
  - **Thursday Matrix** 16
  - **Sessions** 17
- **Friday**
  - **Friday Matrix** 22
  - **Luncheon Flyer** 23
  - **Sessions** 24
- **Saturday**
  - **Matrix** 28
  - **Sessions** 28

Subject Index 30

Participant Addresses and Index 31

Personal Preparation Checklist 40

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MAIL THIS FORM TO HOTEL -- TO BE RECEIVED BY SEPTEMBER 25, 1995

HOTEL ROOM RESERVATION FORM

Organization: Mid-West Educational Researchers Association (MWERA)

To make your hotel room reservation, please complete and send this form to:

Reservations Manager
Bismarck Hotel
171 West Randolph Street
Chicago, IL 60601
PH.312/236-0123 FX.312/236-3177 Res. 800/643-1500

Specially reduced room rates are available to conference participants. Te ensure a room at the special rate, reservations must be received by the hotel **by September 25, 1995**. After that date, reservations will be made at the prevailing rate on a space available basis.

Name: _____ Ph: _____

Company/Affiliation: _____

Address: _____

City/St/ZIP _____

Sharing room with: _____

Method of payment: _____ Credit Card No.: _____

Signature: _____ Expiration Date: _____

Arrival Date: _____ Arrival Time: _____ Departure Date: _____
(Room may not be available before 2:00p.m.) (Check out by 12 noon)

Reservations will be held until 6:00 p.m. unless guaranteed*

Check type of Accommodation requested:

___ Single occupancy (1 double bed) **$75**
___ Double occupancy (1 double bed) **$79**
___ No Smoking room if available
___ Triple occupancy (2 double beds) **$99**
___ Quad occupancy (2 double beds) **$109**

* To guarantee your reservation, please enclose a check for one night's cost payable to the Bismarck Hotel, or provide your credit card (AMEX, Diners, Cart Blanche, VISA, or MasterCard) information in the above space. **For guaranteed reservations only, I understand that I am responsible for one night's room and tax charges which will be deducted from my deposit or charged to my credit card if I fail to cancel my reservation.**

Signature: _____
All rooms subject to local city tax

NOTE: Hotel Valet parking is $17.00 in/out per 24 hours.

723

MWERA 95 PROPOSAL REVIEWERS
In addition to the Program Committee, the following people are owed thanks:

Carol Albright, *Ft. Wayne Community Schls, IN*
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Dennis Zuelke, *Jacksonville State Univ.*

In all, Program Reviewers considered over 300 different proposals. The Reviewers, and the entire program committee faced tough decisions, with some Divisions having to reject nearly 50% of their proposals due to space limitations. I thank these people for all of their hard work.

If you would like to be a Program Reviewer next year, attend your Divisional meeting and submit your name there. Also, send your name directly to Kim Metcalf, 1996 MWERA Program Chair, Indiana University, School of Education, Bloomington, IN 47405;
email: kmetcalf@ucs.indiana.edu

IF YOU ARE NOT THE KIND OF PERSON WHO READS THE BACK FIRST, I SUGGEST YOU CONSIDER JUST THAT! PAGE 40 HAS A CHECKLIST OF IMPORTANT ITEMS, AND MAY SAVE YOU TIME AND INCONVENIENCE IF YOU KEEP TRACK OF THESE ITEMS AS YOU MAIL IN YOUR REGISTRATION FORMS, ETC.

MEETING REGISTRATION FORM

1995 MWERA ANNUAL MEETING CHICAGO, IL—OCTOBER 11-14, 1995

All attendees, including program presenters, must register and pay applicable fees. Please clearly print or type your name as you wish it to appear on your meeting badge. **Nonmembers wishing to apply for membership** may register at the member's rate if membership application and fee is enclosed with registration.

Name _____

Affiliation _____

Address _____ **City/ST/ZIP** _____

Highest Degree _____ **MWERA-Division Preference** _____

Institution Awarding Degree _____ **Major area of Specialization** _____

Telephone: Bus. _____ **Hm.** _____

E-mail _____ **Fax** _____

Is this your first MWERA Conference? Yes ___ No ___

Pre-Conference Workshops (see following pages for details)

* Fee for these workshops is separate from Registration fee.

W.1.ME ___@ $10 W.1.C ___@ $10 W.1.E ___@ $5 W.1.L ___@ $10
W.1.B ___@ $10 W.1.D ___@ $5 W.1.F ___@ $10

TOTAL for Pre-Conference Workshops $_____

Meeting Registration	**Postmarked by Sept 25**	**After Sept 25**	
MWERA Member	@ $45	$55	$_____
Nonmember*	@ $50	$60	$_____
Student Member (**must enclose proof of current status**)	@ $30	$35	$_____
Attending Luncheon **ONLY**	@ $23	$25	$_____

• The Friday luncheon is included in the registration fee. Will you be present at the luncheon? ___ Yes ___ No

Membership Dues

1995 Membership dues (required for all participants/registration discount rate) must be paid by Sept. 25, 1995. - Regular $18, Student $10 ..... $ _____

1996 Membership dues - Regular $18, Student $10..... $ _____

Life Membership - $180 ..... $ _____

Conference Workshops: fee will be waived if meeting registration is paid in full

T.1150.F ___@ $5 T.450.#505 ___@ $5 F.130.ME ___@$10
T.1150.Max ___@ $No fee T.1010.#505___@ $10 F.310.ME ___@ $10
T.1010.E ___@ $5 F.1010.F ___@ $5 S.1010ME ___@ $5

* Non-members attending only workshops should submit workshop fees **only.** **TOTAL** for Workshops $ _____

MWERA Material All materials must be picked up at the registration desk at the conference, prices do not include postage. Payment now guarantees that we will try to have materials available for you.

Indicate quantities below:

____ MWERA Membership Directory $7 ..... $_____
____ MWERA 95 Annual Meeting Abstracts (__ paper $4) (__ IBM $3)..... $_____
____ MWERA Lapel Pin $3 each ..... $_____

TOTAL AMOUNT ENCLOSED FOR MEETING $_____

When registering and/or joining, please make check(s) payable to MWERA, and mail with completed form(s) by Sept 25 to: Jean Pierce, Northern Illinois Univ., Dept EPCSE, DeKalb IL 60115

730

GENERAL INFORMATION

Registration: Everyone participating in or attending the MWERA annual meeting must be registered. Those planning on attending the annual meeting are encouraged to pre-register for the conference, any workshops, and make hotel reservations early **(pre-registration and hotel reservations must be received by September 25, 1995).** Registrations mailed after Sept. 25 may not be received, and on-site payment in the form of cash or personal checks will be expected. If double payment is later determined, a refund will be issued. On-site registration and packet pick-up will be available in the lobby of the Bismarck at the following times:

Wednesday, Oct. 11, 11:30-4:30 pm
Thursday, Oct. 12, 8:00 am-4:00 pm
Friday, Oct. 13, 8:00 am-4:00 pm
Saturday, Oct. 14, 8:00-10:30 am

Shared Housing: Mary Sudzina is coordinating shared housing arrangements. Please call her at (513)229-3389 if you have a room to share or are looking to find someone to share with.

Name tags should be worn to all sessions and must be worn to the conference luncheon. Those teachers, administrators, and others who are registering for workshops only should still come to the registration desk to receive their special tags and permits to enter workshops.

Membership provides reduced conference registration fees and a subscription to the MWERA official publication, the Mid-Western Educational Researcher. Those attending are encouraged to join. Conference presenters must be paid members for 1995.

Selected MWERA publications are available through pre-registration. These include the Directory of MWERA members for $7, the MWERA 1995 Meeting Abstracts for $4 paper, and $3 IBM computer disk. These publications may not be available at the conference unless ordered through pre-registration. If they are available at registration, cash or checks will be accepted.

MWERA lapel pins are available this year for the first time. The pins are your way to show others that you support MWERA, and they add to your attire. These stylish pins were made available to us at a special discount, and we have passed along that discount to you.

This year's **Exhibit Hall** will feature publishers and those providing materials and services to educators on Friday, in the Maximillian Room. We have added a shanng table for you to bring job announcements, fill-out mentor forms, and share other information which helps all of us. Plan on stopping by between 9 am and 4 pm.

Evaluate the sessions and the annual meeting: As in previous years, we request that all session Chairs distribute evaluation forms for each session. In your registration packet, you will also receive a form to evaluate the meeting. The forms get returned to the registration table, or directly to Jack Snowman, Member-at-Large. This is your conference, and the comments you provide are helpful to us in improving our meetings.

The **Blackhawk** room will be used for session preparation; practice with overheads, etc. You are welcome to use it for continued discussions after sessions (an alternative to using the hallways, please). It can also be used for people attending who are not staying at the hotel to take respite between sessions.

EXPLANATION OF PROGRAM AND SESSION FORMATS:

T 1050 C Teacher Beliefs (Division K-Paper session)

T = Session is held on Thursday.
1050 = Session begins at 1050 in the morning
C = Session is held in Parlor C

This information is followed by the session title, the Divison sponsoring the session, and then the session format.

For all sessions, authors are expected to have complete copies of their papers available. We suggest 30 copies. Make sure you deposit one at the registration table for forwarding to ERIC archives.

Session Formats

Paper sessions provide each author an opportunity to present an abbreviated version of a paper. The presenter usually has 15 minutes for the presentation. The author should not read the paper as a form of presentation. When a discussant is included in the session, comments should be made that synthesize, compare, or contrast the papers, or point out the strengths and weaknesses fo the studeis. The discussant should not provide a detailed critical review, but rather focus on the conceptual and methodological nature of the papers and their results.

Table poster/Small discussion groups allow the author an opportunity to interact with small groups of interested colleagues for a longer period of time (usually 40 minutes). Authors are encouraged to use poster display boards to present their work on the top of the table. The poster should include a brief abstract as well as highlights or significant information from the paper presented in a large font size for easy reading from a distance.

Symposia allow the panel of presenters with a shared topic an opportunity to make a presentation and share views.

Invited speakers and panels have been invited to address the conference. They are recognized leaders in education and have been asked to share their experience and knowledge.

Roundtables allow the author an opportunity to discuss thei work with a small group in a circle, participative manner.

Workshops are designed to allow presenters to involve those attending in the active development of new skills or knowledge. They are scheduled for 1.5 or 3 hours. A small fee is charged for pre-conference workshops and for t hose workshops scheduled during the conference. The during-conference workshop fee is waived for members who have paid for full conference registration.

EVENTS AND INFORMATION

Division Meetings provide colleagues within MWERA Divisions an opportunity to discuss experiences and plan future events. **Possible** invited speakers are discussed as well as the Annual Meeting as a whole. One of the most important activities is to gather names of those interested in serving as Division Chairs. The Program Chair chooses Chairs to head each Division for the next year. Often a "junior" Chair becomes the "senior" Chair for the next year. To make this early hour easier, we are having coffee and rolls sponsored by various publishers. The hotel also has agreed to have its continental breakfast bar open in the lobby for members to purchase other items. This year's Division Meetings are held on Friday and Saturday, 8:00-9:00 a.m.. Check the program schedule for your Division's specific meeting place. Feel free to attend a different one each morning!

The Association Council is the governing body of MWERA. It includes the elected members of the Association Council and the Board of Directors. At the Annual Meeting financial reports and other Association business are discussed. This year's Association Council meeting is Thurs. at 3:10 p.m.

The Cracker Barrel Social is an informal get together to wind up the first full day of the conference. A cash bar is planned.

The General Business Meeting is open to all paid members. It is the only activity scheduled during the 9:00-10:00 a.m. time slot on Friday. It is hoped that everyone will attend. Information is presented and Association business is discussed. The Graduate Student award drawing is held. Nominations for officers and councilors are also accepted.

The Friday Luncheon is included in the conference registration fee. Announcements are made and an address will be given by **Gerald Bracey.** This year both the keynote speaker and the luncheon speaker have agreed to be available after their presentations for informal discussion and questions and answers.

The Program Committee Meeting will take a look at the positives and negatives of the current Annual meeting and begin preparations for next year's meeting. Comments, criticisms, and volunteers are invited. Division Chairs are expected to attend.

The President's Reception is held in the Regency Suite of the Bismarck beginning at 9:00 p.m. on Friday. Everyone is invited to relax with new and old friends and finish discussions or start new ones. Soft beverages will be provided.

Thomas Andre's Presidential Address entitled Science, Gender, and the Thinking School will be on Saturday morning at 9 a.m.

Suggestions to Presenters

To make the conference sessions as helpful and enjoyable as possible, the Board of Directors ask presenters to please follow these guidelines:

1. Send a completed copy of your paper to the Session Chair and Discussant so that it is received no later than September 25, 1995. Discussants are not obligated to discuss papers received after this date.
2. Bring at least 40 copies of your paper to the conference. People interested in your paper should receive a copy at the conference.
3. Make overheads and handouts that are attractive and readable. Posters should be firm enough to lean or lay on a table and should include an abstract and highlights from the paper.
4. Plan to present, rather than read your paper in the time allotted.
5. Session chairs should divide the time available equally among the presenters, discussants, and the audience.
6. Because of purchase costs, storage space, and maintenance issues, equipment other than overheads will not be provided.

How to Get to the Conference

When coming to Chicago, attendees have a variety of transportation options:

O'Hare Airport to the Bismarck Hotel (3 options)

1. Take a CTA train to downtown for about $2.00. Catch the train in the basement of Terminal 3. Take an A or B line. Get off at the Lake Transfer station. This is in the basement of the State of Illinois Building. Climb the stairs and proceed to the Bismarck, one block. This is the fastest way during rush-hours, and the cheapest.
2. Take the Continental Bus for $12.50 one-way or $22.00 round-trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.
3. Take a cab for around $22.00. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7-10 a.m., 3-7 p.m.), the ride could take an hour or more. Tips average fifteen percent.

Midway Airport to the Bismarck Hotel (3 options)

1. Take a CTA train to downtown for about $2.00. Catch the train at the east end of the airport. Get off at the Clark & Lake station. Climb down the stairs and proceed to the Bismarck, one block.
2. Take a Continental Airport Bus for $9.50 one-way or $16.75 round trip. No reservations are required from the airport. See the agent at the booth for tickets.
3. Take a cab for around $18.00. See O'Hare information above regarding time.

Driving But NOT Parking Downtown (3 options)

From the North or West

1. Park near a Metra station and take a Metra Train downtown. From the Metra station you will need to take a cab to the hotel. Depending on where you board the train, your ride can be inexpensive. For details call (312)836-7000. Be certain to find out about return trips, especially on weekends.
2. Park at O'Hare remote (follow highway signs to O'Hare), take a shuttle into O'Hare and follow any of the O'Hare options. Remote parking is inexpensive.
3. Park at Kiss and Ride at either the Cumberland or the Harlem Avenue exits off of I-94 (the Kennedy). Take the CTA train (See O'Hare option 1). Parking is inexpensive.

From the South or East

1. Park near a Metra station and take a Metra Train. See #1 above.

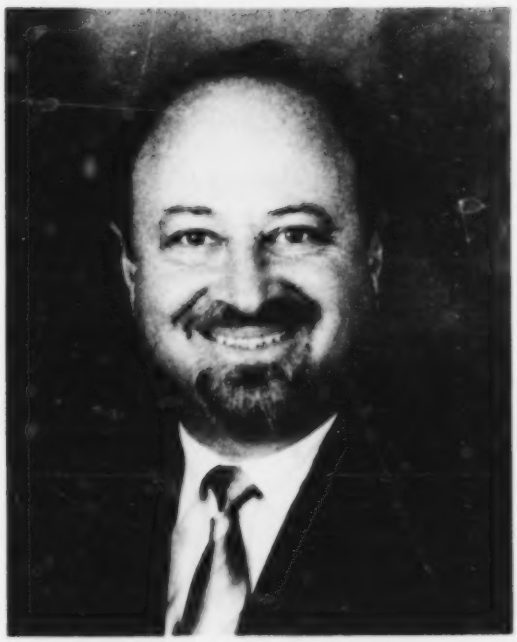
Driving and Parking Downtown (5 options)

- Listen to the Radio (670 or 780 AM) for traffic reports.
- Remember, rush hours are 7-10 a.m., 3-7 p.m. in both directions. Travel in the city takes time. There is a lot of construction. Plan at least two hours from the near suburbs to downtown. Plan one-half hour (minimum) in downtown traffic.

1. Coming in on I-94 from the North: I-94 junctions with the Kennedy at Irving Park Road. Continue downtown. If traffic is good, it should take 20 minutes. Beyond the Ohio Street exit, get in the right-hand lane. Exit at Washington Street going East. At LaSalle, make a left, go one block and make a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15.00/day) or have the hotel park it for an in/out fee of $17.00 per day. There is NO street parking.
2. Coming in on I-90 from the Northwest: Follow I-90 downtown. This becomes the Kennedy. Follow directions in #1 above for exits and parking.
3. Coming in on I-90/I-94 from the Southeast: Take the I-90 (Skyway) in. The toll will be about $2.00, but it will save you alot of time. Get in the Express Lanes to downtown. When you approach the LOOP, follow the signs saying I-94, Kennedy and Wisconsin. Exit at Monroe Street and head East (right). At LaSalle, take a left, then a left on Randolph to the hotel. After you drop off your baggage, you can park your car in a self-park (about $15/day) or have the hotel park it for an in/out fee of $17.00/day.
4. Coming from the South or Southwest: Take the I-57 in. This junctions with I-94 and I-90. Read #3 above.
5. Coming from the West: Take the I-55 or I-290 into downtown. Follow the signs saying to I-94 Wisconsin. Read #3 above.

If you are arriving some other way, or have any questions, please call Sharon McNeely at (312)794-2788 before your trip. She will be happy to help.

The Bismarck Hotel *171 W. Randolph St., Chicago IL 60601*
The Bismarck Hotel has recently been partially renovated and no longer has any single beds in any rooms. Each room has a security chain, peep hole and voice mail. The Bismarck has been home to the Annual Meeting of the Mid-Western Educational Research Association for several years and is a friend to the Association. It continues to offer some of the most reasonable rates in Chicago. A change in management has brought major renovations to the Hotel as well as additional services and activities. The Bismarck's Gate 3 1/2 Sports Bar is open 11am-1am with lunch, dinner and snacks. The Palace Cafe' serves breakfast and lunch. The Crown room is open for Breakfast, lunch, dinner and serves a great lunch buffet! The Green Orchid Lounge has Jazz music Thursday-Saturday, 7pm to midnight. The Hotel is also offering complimentary shuttle bus service to many of the sights in Chicago including the museums, Art Institute, and the Water Tower shopping area.



DAVID BERLINER (at left)

Professor, Arizona State University,
Educational Psychologist, Researcher,
Author of Numerous Articles and Texts

Recent author of book on the crisis in education, and co-editor of the *Handbook of Educational Psychology*, Past-President of the American Psychological Association's Division of Educational Psychology, and world-renowed lecturer on critical topics in education.

Dr. Berliner joins us for the Wednesday night forum on the manufactured crisis in education. He will provide the Opening Keynote address on Thursday morning, and then informally discuss issues he raises in a smaller session immediately following the keynote.

GERALD BRACEY (at right)

Distinguished Fellow for the Agency for Instructional Technology,
Policy Analyst, Researcher, Writer,
Author of Numerous Articles

Author of the Bracey Reports. *The Fourth Bracey Report* has been nominated by Project Censored as one of the best under-reported articles of 1994. Also author of *Transforming America's Schools*. Currently travels worldwide speaking, and training educators and educational researchers.

Dr. Bracey will join us on Friday for the Luncheon address, which will provide new insights into recent trends in reporting American students' achievement test scores. Immediately following the luncheon he will provide an informal discussion of the issues he raises.

BARBARA MCCOMBS (at right)

Senior Director for the Motivation and Human Development group at the Mid-continent Regional Educational Laboratory, Aurora, Colorado; Educational Psychologist, Researcher, Author of Numerous Articles

Primary author of the Learner-Centered Psychological Principles: Guidelines for School Redesign and Reform, developed by the American Psychological Association's Task Force on Psychology in Education. Works for systemic school reform, and trains practioners in putting the Learner-Centered Principles (LCPs) into practice.

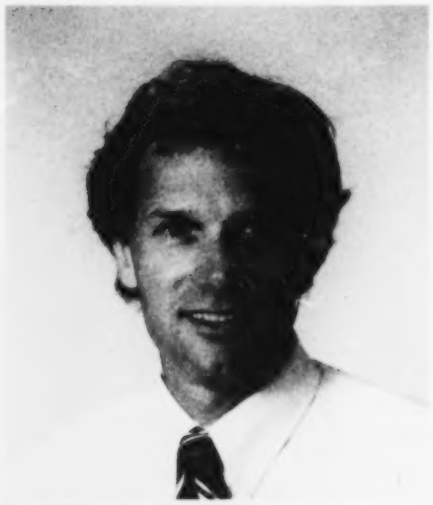
Dr. McCombs will join us on Wednesday to do a pre-conference training workshop on the LCPs. On Wednesday night she will join in the forum on the crisis in education. On Thursday afternoon, she will provide an Invited Address on promoting teacher leadershiip through self-assessment and reflection tools.

THOMAS ANDRE (at right)

Professor, Iowa State University, Educational Psychologist, Researcher, Author, President of the Mid-Western Educational Research Association.

Dr. Andre's researches issues related to teaching subject area content, particularly science, and to issues of gender. Although he has several other commitments for the meeting, and will be hosting the President's Reception on Friday night, he will be giving his Presidential address bright and early Saturday morning. His talk will talk about science, gender, and the thinking school.

BARBARA SHADE (above)
Dean of the School of Education at the University of Wisconsin-Parkside, educational psychologist, and author of numerous articles on teaching to culturally different information-processing styles. Dr. Shade will join us on Friday morning for an Invited Address on creating culturally compatible classrooms.



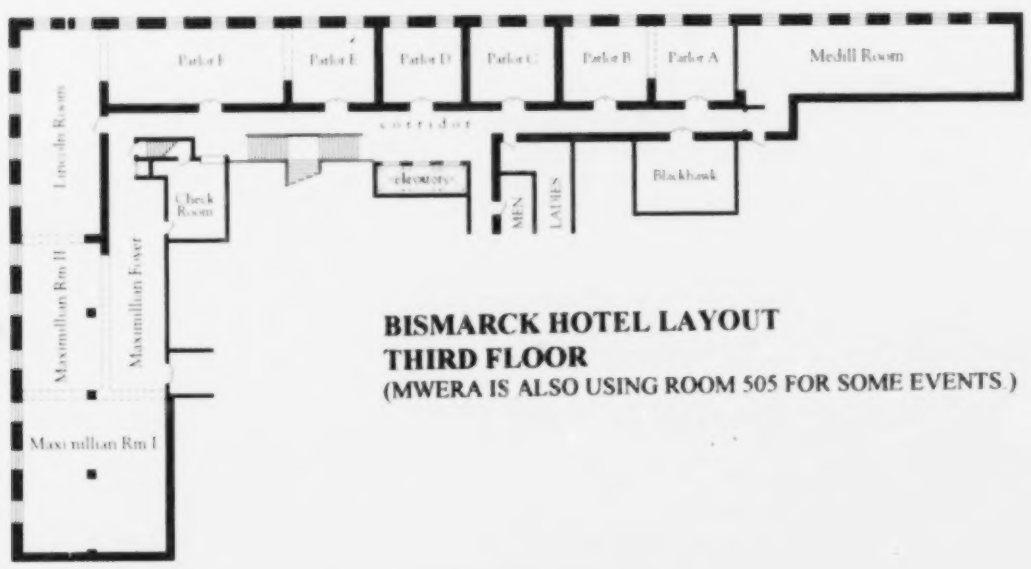
KENNETH KIEWRA (above)
Professor of educational psychology at the University of Nebraska, Lincoln, and author of numerous articles on note-taking and knowledge representations. On Thursday afternoon, Dr. Kiewra, a former MWERA president, will present his overdue address on knowledge representation.

GREG MARCHANT (above)
Professor, Ball State University, MWERA President-Elect, Past-President of the Teaching Educational Psychology SIG of AERA, and fully recovered 1994 MWERA Program Chair! Dr. Marchant will be one of the panelists at the Wednesday night forum on the manufactured crisis in education.

MICHAEL CARL (above)
Dean of the College of Education, Northeastern Illinois University. Dr. Carl has developed a forum/panel of school development and outreach professionals who will discuss new initiatives in forming professional development liaisons with schools.

WEDNESDAY

Time	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincoln	Medill
1:00-4:00pm	Workshop *Multiple Regression* Newman, I.	Workshop *Simulation Studies* Smith, R.	Workshop *Teacher Evaluation* Bitner & Kratzner 1:00-2:30pm	Workshop *Self-Esteem Mentoring* Glenn, Walker, Jackson, Midgette 1:00-2:30pm	Workshop *Portfolios* Newman,C	Workshop *NCREL Information* Durrett, Knuth, Quinn, Stinnette, van der Ploeg	Workshop *Learner Center Practices* McCombs, B.
8:00-9:30pm							**OpenForum** ***Crisis in Education*** **Berliner, Marchant, McCombs**



BISMARCK HOTEL LAYOUT
THIRD FLOOR
(MWERA IS ALSO USING ROOM 505 FOR SOME EVENTS.)

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MWERA WORKSHOPS: PRE- & DURING-CONFERENCE

MWERA sponsors workshops as a means to provide information and education to our members and to other education-related professionals. Registration for each workshop is $10.00, unless noted. MWERA reserves the right to cancel workshops which do not have sufficient registration at the conclusion of advance registration.

WEDNESDAY, PRE-CONFERENCE WORKSHOPS
1 - 4 p.m. (unless noted)

W.1.Me For Our Students, For Ourselves: Implementing Learner-Centered Practices
Medill - Fee $10.00
PRESENTER: *Barbara McCombs, Mid-Continent Regional Educational Laboratory in Aurora, CO*
This workshop is designed to engage teachers, administrators, professors, and other participants in an exploration of the concept of learner-centered and how it is implemented in practice at the school and classroom levels. Participants will engage in activities designed to increase their awareness of the need for learner-centered practices, understanding of effective practices associated with a learner-centered model, and skills for engaging in these practices. Video models will complement the training activities.

W.1.F How to Implement Portfolios in the Classroom as a Means of Student Motivation and Alternative Assessment Parlor F - Fee $10.00
PRESENTER: *Carole Newman, University of Akron*
This workshop will present a "how to" model to help teachers and administrators take the initial steps to begin the portfolio process in classrooms. There will be a brief discussion of the philosophy and value of implementing portfolios as a means of motivating and empowering students to become active decision makers in their learning. Participants will then learn about the decisions which must be made when getting started and how to make the process manageable and rewarding for both student and teacher. Discussion will focus on establishing teacher goals for the portfolio, management techniques, selecting appropriate evidence, developing criteria and rubrics for student self-evaluation and teacher assessment, student goal setting and parent involvement.

W.1.E Developing a Self-esteem Mentoring Program for Children and Adolescents with Disabilities in Public Schools 1:00-2:30 p.m. Parlor E - Fee $5.00
PRESENTERS: *Eddie E. Glenn, Illinois State University*
Judy Walker, Developmental Psychologist (Private Practice)
Diedre Jackson, Bradley University
Thomas Midgette, University of Arkansas
Teachers, counselors, administrators, and other participants will be provided with information about how to develop a self-esteem mentoring program for individuals covered under the Education for All Handicapped Children Act (P.L. 94-142) and the Individual with Disabilities Education Act (P.L. 99-457). A brief literature review that provides correlations between disabilities and lowered slef-esteem will be presented. The training provided is designed to help develop awareness, sensitivity, and knowledge about children and adolescents with disabilities, and help participants develop and design activities that enhance self-esteem, especially the use of a mentoring program. **THIS WORKSHOP WILL ALSO BE OFFERED ON THURSDAY, 10:10-11:40 am, Medill**

W.1. Li Obtaining educational information from and developing collaborative relationships with the North Central Regional Educational Laboratory (NCREL)
Lincoln - Fee $10.00
PRESENTERS: Deanne Durrett, Randy Knuth, Bill Quinn, Lynn Stinnette, Arie van der Ploeg, NCREL
NCREL serves educational needs in Illinois, Indiana, Iowa, Ohio, Michigan, Minnesota, and Wisconsin. It's work focuses on comprehensive and systematic school restructuring that is research-based and learner-centered. It disseminates information about effective programs, develops educational products, holds conferences, provides technical assistance, and conducts research and evaluation. NCREL uses telecommunications technology to link and sustain a variety of "job-alike" networks and task forces in the region, including assessment directors, intermediate service agencies, state mathematics and science specialists, and others. It works with numerous university staff and seeks collaborative relationships. This workshop will provide more information on programs, and demonstrate some work in progress including the Strategic Teaching and Reading Project, Pathways to School Improvement (NCREL's WWW information server that delivers educational reserach to the desktop), the Leadership Academy, the Census Web server, the NCES School District Data Book, and the State Student Assessment Programs data base.

W.1.D A Primer on Building Teacher Evaluation Instruments 1:00-2:30 p.m. Parlor D - Fee $5.00
PRESENTERS: *Ted Bitner, Ron Kratzner, Anderson University*
Teachers, administrators, professors, and other participants will be presented with information designed to build accurate teacher evaluation instruments. These instruments use a scientifically oriented knowledge base which requires that the concepts of validity and reliability be understood. Both content and construct validity are discussed, including suggestions for developing them. Reliability and how to establish it is presented. A checklist of key questions is included with suggestions for moving from present instruments to more valid and reliable evaluation instruments.
THIS WORKSHOP WILL ALSO BE OFFERED ON FRIDAY, 1:30-3:00 P.M., Medill

W.1.B Multiple Regression for the Evaluation Practitioner
Parlor B - Fee $10.00
PRESENTER: *Isadore Newman, University of Akron*
This workshop is an introduction to the General Linear Model and its relationship to various tests including simple regression and multiple regression. Participants will be shown how to use multiple regression to do analysis of covariance. The relationship of regression and traditional analysis of variance, repeated measures designs and discriminate analysis, policy capturing and multivariate T will be discussed. Examples of interactions between (a) categorical *continuous variables, (b) continuous *categorical variables and (c) categorical *categorical variables will be provided. Curvilinear relationships, power analysis and meta-analysis will also be discussed.

W.1.C Designing and Implementing Simulation Studies in Rasch Measurement Parlor C - Fee $10.00
PRESENTER: *Richard M. Smith, Rehabilitation Foundation Inc./Marianjoy Rehabilitation Hospital and Clinics*
This workshop is designed to provide researchers and graduate students with the theoretical foundations and computer expertise necessary to conduct simulation studies in Rasch measurement, including the design of studies to determine the

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null distribution of statistics, Type I error rates, and the power of statistics to detect departures from the null distribution. Three Rasch measurement models will be discussed: rating scale, dichotomous, and partial credit models. Research on the number of replications necessary for stable results will be summarized. Participants will be trained to use computer programs to generate data for simulation studies, including batch processing techniques. Each participant will be able to purchase ($15) a copy of the handouts and a DOS-based simulation program that can be used to generate response data.

THURSDAY, DURING-CONFERENCE WORKSHOPS

T.1010.E A Self-esteem Mentoring Program for Children and Adolescents with Disabilities in Public Schools
Medill - Fee $5.00 (Fee waived if conference fee paid)
PRESENTERS: *Eddie E. Glenn, Illinois State University*
Judy Walker, Developmental Psychologist (Private Practice)
Diedre Jackson, Bradley University
Thomas Midgette, University of Arkansas
See Wednesday, W.1.E for a complete description.

T.1150.Max State-wide Assessment Practices: Using Student Assessment Data Bases in General, and the Illinois Base in Particular Maximillan - No Fee
PRESENTER: Arie van der Ploeg, North Central Regional Educational Laboratory
This interactive presentation/workshop will provide information on how student assessment data bases are currently functioning, how to access these, and what potential benefits they may have to educational researchers. The Illinois data base will be used as an example to explain set-up, access, and what types of information are available. The participants will have a chance to discuss potential feasibility of use of the data bases for their own research applications.

T.450.#505 Writing a Letter of Application: Addressing the Pertinent Issues Room #505 - $5.00
(Fee waived if conference fee paid)
PRESENTERS: *Mary K. Bendixen-Noe and Gilbert L. Naizer, Ohio State University-Newark*

This presentation will focus on how to write a high quality letter of application for the field of academia. Participants will be involved in identifying key criteria in actual academic advertisements, and addressing these in a letter of application. Additionally, individuals will be able to recognize their professional strengths and will learn how to highlight these qualifications for specific positions.

In a recent search committee, the presenters were amazed at the applicants' lack of knowledge on how to write a letter addressing a specific academic position. Of the letters received, only twenty percent contained information that was appropriate to the position as advertised. The information provided may assist individuals in being granted an interview. Participants will receive feedback that should strengthen their letter of application skills. At the conclusion of the workshop, each participant will have developed a sample letter of application relevant to their skills and interests.

FRIDAY, DURING-CONFERENCE WORKSHOPS

F.1010.F Developing Research-Based Student Teaching Supervision Materials Medill - $5.00
(Fee waived if conference fee paid)
PRESENTERS: *Donald Williams, Doug Smith, Hema Ramanathan, Laura Lipsett, Ohio State University*
This workshop is designed to involve participants in an examination of student teaching supervision materials based upon current research and theory regarding the student teaching practicum. Findings from recent research concerning the content and current knowledge base of student teaching programs will be used to link theory and practice in the analysis of student teaching materials. Workshop participants will consider the process of developing a student teaching handbook beginning with the underlying philosophy and goals of a program and maintaining these through all the elements of the student teaching experience. A structural "model" for handbook development and lists of research-based roles and tasks of supervisors will be provided to guide workshop activities.

F.130.Me A Primer on Building Teacher Evaluation Instruments 1:30-3:00 p.m. Medill - Fee $5.00
(Fee waived if conference registration paid)
PRESENTERS: *Ted Bitner, Ron Kratzner, Anderson University*
See W.1.D for complete description.

F.310.Me Getting and Keeping an Academic Position
Medill - Fee $10.00 (Fee waived if conference fee paid)
PRESENTERS: *Jerry Jinks, Illinois State University*
Gregory Marchant, Ball State University
Kim Metcalf, Indiana University
This three hour workshop is intended primarily for graduate students anticipating careers in higher education and early career faculty who are in the initial stages for establishing their records for tenure and promotion. Others who might find the workshop of interest include those who may not have had recent experience with the academic job market but are serving as advisors for graduate students as well as faculty and administrators interested in faculty recruitment. The workshop is presented in two parts. The first part deals with the job search and the second part deals with adjusting to the faculty role and with preparing oneself for merit review, tenure, and promotion. Faculty search and evaluation procedures will be reviewed, examples of application letters and vitae will be provided as will insights into the screening and interview processes. Suggestions for managing the teaching, scholarship, and service expectations of the faculty role will also be presented along with techniques for building a strong dossier. The presenters will bring their collective faculty and administrative experience with institutions of various missions, sizes, and locations to bear upon separating myth from reality regarding academic job searches and faculty evaluation.

S.1010.ME Ways to Assess and Enhance Students' Self-Concepts Medill-Fee $5.00
(Fee waived if conference fee paid)
PRESENTERS: *James R. Necessary, Ball State University*
Thomas Parish, Kansas State University
This 90 minute workshop will discuss ways to assess self-concepts and other social-emotional attributes, focusing on different approaches to measure and interpret results of various scales. Then, various methods for enhancement will be presented, including regular and alternative pathways. Specific strategies will be discussed.

CRISIS IN EDUCATION

WHO ARE THE PLAYERS?
WHO PROFITS?
WHAT IS THE AGENDA?

David Berliner

David Berliner, Arizona State University

With Gregory Marchant, Ball State University and
Barbara McCombs, McREL as Panel participants.

Medill Room, **Bismarck Hotel,** 171 W. Randolph, CHICAGO, IL

Public Invited - **8:00 pm** - No Charge

Sponsored by the Mid-Western Educational Research Association

Please duplicate, distribute, and post this announcement

THURSDAY

Time	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincoln	Medill	Maximillan	#505	Black hawk
8:00-9:00am	**COFFEE**										open for
9:00-10:00am									**KEYNOTE: Berliner**		prac-tice with
10:10-11:40am	K: Paper *Preservice Teacher Education*	B: Sympos *School Climate*	G: Paper *Minority Success*	D: Sympos *Statewide Assessment*	K: Paper *Teacher Education*	**NEW MEMBER WELCOME**	**BERLINER DISCUSSION GROUP**	Workshop *Self-Esteem*		Wkshp *Port-folio*	over-heads, work area
11:50-1:20pm	I: Paper *Professions Training Issues*	K: Sympos *Teaching as Research*	C: Paper *Individual Differences*	D: Paper *Monte Carlo Techniques*	G: Paper *Multi-cultural Under-standing*	K: Paper *Preservice Teacher Education*	H/K: Sympos *Environment Science Programs*	Symposium *Attitudes, Math and Science*	Workshop *State-wide Assessment*	10:00a-1:10pm	rest & Cont'd Discus-sion
1:30-3:00pm	A: Paper *Legal Issues*	K: Paper *Teacher Education Programs*	F: Paper *Reform: Historical Perspectives*	H: Paper *Assessing Behaviors*	J: Paper *Interactive Learning*		G: Sympos *American Business/ Multicultural*	**NEW Association Council Training**	**INVITED** *Teacher Leadership*		after ses-sions
3:10-4:40pm	I: Paper *Measurment Issues*	B: Paper *Curriculum & Institutional Methods*	C: Paper *Literacy*	D: Paper *Ratings & Standard Setting*	K: Paper *Teacher Preparation*	J: Paper *Cooperative Learning*	K: Sympos *Mentor*	**Association Council Meeting**	Round tables 3:10-3:50pm Table Poster 4:10-4:40pm	F:Attnt *Inter-pretations Am.Ed*	
4:50-6:20pm	A: Paper *Leadership Principalship*	K: Paper *Differences in Classroom*	K: Paper *Teaching Issues*	D: Sympos *Technological Innovations*	E: Paper *Prev & Intervention Counseling*	J: Paper *Access in Higher Education*	K: Sympos *Social & Moral Motivation*	**INVITED** *Knowledge Represen-tation*	Table Poster 4:50-5:50pm	Wkshp *Letter of Appli-cation*	
6:30-8:00pm									**CRACKER BARREL**		

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THURSDAY

Coffee 8:00 a.m.
Sponsored by Brown & Benchmark Publishers

9:00 a.m. - 10:00 a.m.

T.9.MAX

Opening Keynote Address

The Manufactured Crisis in Education: Separating Facts from Fancy

SPEAKER: *David Berliner, Arizona State University*

9:00-10:00 a.m.
in the Maximillan Room

CHAIRS: *Sharon McNeely, Northeastern Illinois University*
Gregory Marchant, Ball State University

10:10 a.m. - 11:40 a.m.

T.1010.F New Member Welcome:
An introduction for those new to MWERA or the annual meeting
10:10-11:40 a.m. Parlor F
CHAIR: *Connie Bowman, University of Ohio*
PARTICIPANTS: MWERA *Officers and friends*

T.1010.L Discussion Group
10:10-11:40 a.m. Lincoln
CHAIR: Clint Chase
GUEST: ***David Berliner**, Arizona State University*
Follow up to the Keynote Opening Address
An informal discussion

T.10:10.A Preservice Teacher Education
(Division K-Paper Session) 10:10-11:40 a.m. Parlor A
CHAIR: *Linda Plevyak, Ohio State University*
PARTICIPANTS:
Unlimited Wait-Time in University Classrooms and Individual Settings *Orpha K. Duell, Tany'a, Swygert, Wichita State U.*
Process vs. Product Methods of Making STAD Team Awards *William J. Gnagey, Jo L. DeNoyer, Illinois State University*
Personal and Interpersonal Narrative: An Experiential Approach the Study of Human Development *William New, De Pauw U.*
DISCUSSANT: *Mark Mostert, Moorehead State University*

T.1010.B Issues on School Climate and Student Perceptions
(Division B-Symposium) 10:10-11:40 a.m. Parlor B
CHAIR: *Dr. Carolyn Benz, Univenity of Dayton*
PARTICIPANTS:
Comer School Development Process: Differences Among Three Grade Levels in Perception of School Climate *Carolyn Benz, U. of Dayton; Mary Lou Andrews, Pat Hoyle, Montgomery County Schools Pam Young, Springfield City Schools*

T.1010.C Impediments to Minority Success
(Division G-Paper Session) 10:10-11:40 a.m. Parlor C
CHAIR/DISCUSSANT: *Mary Ann Flowers, Cleveland State U.*
PARTICIPANTS:
Refuting the Myth of the Model Minority: The Case of Asian Americans in Education *Judy H. Kim, U. of IL Urbana-Champ.*
The Grammatical Glass Ceiling Impacting Minority Employees *Roger Dore, Loyola University of Chicago*
The Learning Climate for Junior High Minority Students in a Midwestern School *Mary Ann Bendezu, U. of Nebraska-Lincoln*

T.1010.D Issues Pertaining to Combining Item Formats in a Statewide Assessment
(Division D-Symposium) 10:10-11:40 a.m. Parlor D
CHAIR: *Christine Fox, University of Toledo*
ORGANIZER/PARTICIPANT: *Jan Crandell, Ohio Dept of Ed*
PARTICIPANTS: *Sharon Frey, Sara Hennings, Tom Hirsch, Riverside Publishing Company*
This is a Symposium of four presentations. They are as follows: The Design of an Assessment Using Both Multiple-Choice and Open-Ended Questions; Scaling and Equating Test Forms Using Multiple Item Formats; Test and Scoring Reliability Issues; Differential Item Functioning and other Fairness Issues

T.1010.E Teacher Education
(Division K-Paper Session) 10:10-11:40 a.m. Parlor E
CHAIR/DISCUSSANT: *Susan M. Brookhart, Duquesne U.*
PARTICIPANTS:
Contemporary Supervisory Practices: Profiling the Cooperating Teacher *William G. Sparks III, Diana L. Jones, Illinois State U.*
What Research Tells Us About Nontraditional-Aged Students *Mary Bendixen-Noe, The Ohio State University*
The Effects of Teacher Age, Teacher Experience and Administrative Level of the Evaluator in Employment Screening Decisions *A. William Place, U. of Dayton; John Newby, New Castle High School*

T.130.ME A Self-esteem Mentoring Program for Children and Adolescents with Disabilities in Public Schools
1:00-2:30 p.m. (90 minute workshop) Medill
$5 fee waived if registered with full conference payment
CHAIR: *E. Jane Williams, Columbus Ohio*
PRESENTERS: *Eddie E. Glenn, IL State U.; Judy Walker, Devt.l Psychologist; Diedre Jackson, Bradley U.; Thomas Midgette, University of Arkansas*
*See descriptor on workshop pages

11:50 a.m. - 1:20 p.m.

T.1150.A Educational and Training Issues in the Professions
(Division I-Paper Session) 11:50-1:20 p.m. Parlor A
CHAIR: *Mary E. Lunz, American Society of Clinical Pathologists*
PARTICIPANTS: Enhancing Learning for Future Work: A Description of an On-going Research Program *Ronald R. Morgan, Loyola U. of Chgo; Edward E. Gordon, N. Am. Inst. for Training and Educ. Research; Judy J. Ponticell, Texas Tech U.*
Predicting Persistence in Distance Learning Programs *Nancy F. Fjortoft, University of Illinois at Chicago*
Policy Influences and Effects on Post-Baccalaureate Educational Opportunities in Engineering *Peggy Simpson, University of Cincinnati*
DISCUSSANT: *Kevin C. Larkin, American Dental Association*

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T.1150.ME Attitudes of Under-Represented Groups Toward Mathematics, Science, and Other School Subjects
(Cross-Divisions Symposium) 11:50-1:20 p.m. Medill
CHAIR/ORGANIZER: *Thomas Andre, Iowa State University*
PARTICIPANTS: *Myrna Whigham, Carlie C. Tartakou, Charlotte Hasehuhn, Thomas Andre, Iowa State University*

T.1150.B Teaching as Research: Educational Research, Teachers and the Missing Paradigm
(Division K-Symposium) 11:50-1:20 p.m. Parlor B
CHAIR: *Sandra Michelson, Valparaiso University*
ORGANIZER: *Jeff Kuzmic, De Paul University*
PARTICIPANTS: *Jessie Trepanier-Mougette, Ranchview Elem. School; Robert Mankiewicz, Chgo Voc. School; Steven Strull, Du Sable High School; Stephanie Turrell, Brookdale Elementary*

T.1150.C Individual Differences
(Division C-Paper Session) 11:50-1:20 p.m. Parlor C
CHAIR/DISCUSSANT: *Marlene Schommer, Wichita State U.*
PARTICIPANTS:
Further Validation of the Coping Strategies Inventory for Statistics *Shawn M. Fitzgerald, Michael LeBlanc, U. of Toledo*
A Model of Collegiate Aviation Performance *Gerald E. Larson, Navy Persl. Research and Devt. Ctr; Ronna F. Dillon, So.IL U.*
Gender Differences in SAT Scores: Analysis by Race and Socioeconomic Level *Charles Frederick Haigh, Ball State U. & Ft. Wayne Comm. Schools*

T.1150.D Statistical Methods: Monte Carlo Techniques
(Division D-Paper Session) 11:50-1:20 p.m. Parlor D
CHAIR: *James R. Necessary, Ball State University*
PARTICIPANTS:
The Effects of Skewed Pretest and Posttest Marginal Distributions on the Dependent T-Test and the Wilcoxon Signed Rank Test *Reed A. Castle, Barbara S. Plake, U. of Nebraska*
MANOVA Simultaneous Test Procedures: A Comparison of the Robustness Properties of Selected Contrasts *Janet K. Sheehan, Northern Illinois U.*
Predictive Power Method for Selecting Regression Sample Sizes *Gordon P. Brooks, Robert S. Barcikowski, Ohio U.*
DISCUSSANT: *Jeffrey B. Hecht, Illinois State University*

T.1150.E Expanding Multicultural Understanding
(Division G-Paper Session) 11:50-1:20 p.m. Parlor E
CHAIR/DISCUSSANT: *Ruth Koskela, U. of Wis.-Whitewater*
PARTICIPANTS:
The Multicultural Mentorship Project *Norvella Carter, IL State U.*
Expanding Multicultural Understanding Through the Story Time Experience *Mary Ann Wham, U. of Wisconsin-Whitewater*
Children's Prejudice and Social Attitudes: What Has Cognitive Developmental Level Got to do with Them? *Joan Thrower Timm, University of Wisconsin-Oshkosh*

T.1150.L Evaluating the Effects of Environmental Science Programs on Teachers, Students, and Communities
(Division H/K-Symposium) 11:50-1:20 p.m.Lincoln
ORGANIZER: *Deborah Bainer, Ohio State University-Mansfield*
PARTICIPANTS: *Deborah Bainer, Ohio State U.-Mansfield; Don Williams, Ohio State U.-Columbus; Carol Fialkowski, Chgo Acad. of Sciences; Bora Simmons, Lorado Taft Center*

T.1150.MAX State-wide Assessment Practices: Using Student Assessment Data Bases in General, and the Illinois Data Base in Particular
11:50-1:20 p.m. (Presentation/Workshop) Maximilian
PRESENTERS: *Arie van der Ploeg, North Central Regional Educational Laboratory*
See description on workshop pages.

T.1150.F Preservice Teacher Education
(Division K-Paper Session) 11:50-1:20 p.m. Parlor F
CHAIR: *Anna Austin, National Louis University*
PARTICIPANTS:
Preservice Teachers Changing Attributions to Elementary Students Success or Failure *Stephen R. Wallace, Thomas E. Thompson, Northern Illinois University*
Teaching and Learning: Calculators in 5th and 6th Grade *Mary Ellen Schmidt, Ohio State University*
Preservice Elementary Teachers' Representations of Science: Photography of Science in Your Neighborhood *Gilbert L Naizer, Ohio State University at Newark*
DISCUSSANT: *Kathleen Maury, Mankato State University*

1:30 p.m. - 3:00 p.m.

T.130.A Legal Issues and State Trends
(Division A-Paper Session) 1:30-3:00 p.m. Parlor A
CHAIR: *Charles Kline, Purdue University*
PARTICIPANTS:
Public School Academies: Legal and Administrative Challenges to Charter Schools in Michigan *Lyndon G. Furst, Andrews U.*
Censorship Attempts in Ohio Schools, 1990-1995 *Norman L Sommers, Ashland University*
Politics and "Punks": The Origins, Implementation and Consequences of Michigan's Weapon-Free Schools Act *Beverly B. Geltner, Eastern Mich. U.; John S. Gooden, Georgia So. U.*
DISCUSSANT: *Carolyn Benz, The University of Dayton*

T.130.B Teacher Education Programs
(Division K-Paper Session) 1:30-3:00 p.m. Parlor B
CHAIR: *Carole Newman, University of Akron*
PARTICIPANTS:
The Effect of Specialized Middle Level Preparation: A Case Study S. *Carmen Giebelhaus, U. of Dayton*
Frame Theory Analysis of the Cultures of Three Outstanding Teacher Induction Programs *Karen M. Peterson, Gov.State U., Janet T. Bercik, Northeastern Illinois U.,*
A Variety of Ideal Visions: A Study of Teacher Education *Mary Lou Morton, Joan Kavanaugh, Kwee Hiong Ong, Kelly Sputh, Indiana U.*
DISCUSSANT: *Kathleen Maury, Mankato State University*

T.130.C Reforms and Reformers: A Historical Perspective
(Division F-Paper Session) 1:30-3:00 p.m. Parlor C
CHAIR: *Louise Fleming, Ashland University*
PARTICIPANTS:
Charles William Eliot: His Life and Contributions to Education *Kenny O. McDougle, Pittsburgh State University*
The Importance of the Music Educator in the Misiones Culturales Experiment During the Era of Socialist Education in Mexico *David G. Tovey, The Ohio State University, Mansfield*
Political Theory in the Classroom: The Black Panther Party and Cultural Nationalists *Joy Williamson, U. of Illinois at Urbana*
DISCUSSANT: *Michael Penrod, SE Kansas Ed. Service Center*

T.450.D Technological Innovations in Educational Research
(Division D-Symposium) 4:50-6:20 p.m. Parlor D
CHAIR: *Jeffrey Hecht, Illinois State University*
PARTICIPANTS: *David J. Dwyer, Gigai Fansler, Nicole K. Roberts, Perry L. Schoon, Illinois State University*

T.450.F Access and Success in Higher Education
(Division J-Paper Session) 4:50-6:20 p.m Parlor F
CHAIR/DISCUSSANT: *Wayne Van Zomeren, NW Missouri S.U.*
PARTICIPANTS:
Students' Perceptions of Exceptional Teaching: Traditionally or Cooperatively Defined? *Monica Silva-Raveau, Mladen Koljatic,Pontificia Universidad Catolica de Chile; Frances Stage, Indiana University*
Access to Higher Education in South Africa: The Role of 'Black' and 'White' Universities in the Provision of African Graduates *Reitumetse O. Mabokela, U. of Illinois at Urbana-Champaign*
Examining the Ramifications of Pre-collegiate Intervention for Disadvantaged African American Students *Allen J. Bryson, University of Illinois at Urbana*

T.450.L Social, Moral and Motivation Issues in Schooling
(Division G-Paper Session) 4:50-6:20 p.m Lincoln
CHAIR/DISCUSSANT: *Clara New, U. of Wisconsin, Parkside*
PARTICIPANTS:
Peer Disputes Among Preschoolers: Issues and Strategies *Elizabeth J. Lokon, Miami University*
Influencing the Academic Achievement of At-Risk Students Through Computer Technology *Linda Behar-Horenstein, University of Florida*
A Qualitiative Study of Volunteer Experience and Motivation in a Christian Setting *Nancy G. Saunders, Ball State University*

TABLE POSTERS/SMALL DISCUSSION GROUPS

T.450.Max (Mixed Divisions) Maximillan
CHAIR: *Mian Yusuf, University of Wisconsin, Parkside*
4:50 - 5:30 p.m.
PARTICIPANTS:
The Classroom as a Moral Context *Cary A. Buzzelli, Lisa Cutter, Ali Al Jafar, Indiana University*
The Interaction of Self and Science: Raising Questions About the Validity of Inquiry in Educational Research *Carolyn Benz, Julie Biddle, University of Dayton*
Individualism-Collectivism as Predictors of Stress Type, Attribution, and Stress Coping *Changming Duan, Hoyoung Kim, Lucy Hlavac, Paul Vu, University of Missouri-Columbia*
5:40 - 6:20 p.m.
An Explanation into the Role of Support Community as a Negotiation Toward Meaning for Doctoral Students in Education *Tammy Gooch,, Indiana University*
How Does Centering Affect Interpretability in Hierarchical Linear Modeling? *Tianqi Han, Janet K. Sheehan, Northern IL U.*
Job Satisfaction and Dissatisfaction among a National Sample of School Psychologists *Alex Thomas, Miami University*
A Multi-faceted Evaluation of Satisfaction and Reading Improvement Using the *Writing to Read* Computer Program *Robert G. Harrington, Dick B. Tracy,University of Kansas*

T.450.#505 Writing a Letter of Application: Addressing the Pertinent Issues 4:50-6:20 Room #505 Fee $5.00
(Fee waived if conference registration paid)
CHAIR: Cheryl Kish, Northern Illinois University
PRESENTERS: *Mary K. Bendixen-Noe, Gilbert L. Naizer, Ohio State University-Newark* * See descriptor on workshop pages

6:30 p.m. - 8:00 p.m.

T.630.Max

Cracker Barrel

6:30-8:00 p.m. Maximillan
Friendly conversation and cash bar
COORDINATOR: *Adria Karle-Weiss, Murray State Univ.*

PLEASE SHARE THIS PROGRAM WITH YOUR COLLEAGUES AND OTHERS!

This program is distributed to all paid membership as part of membership dues, and to Researcher subscribers. Producing, printing, and mailing this program costs MWERA thousands of dollars. We ask our members to share their programs with others who may like to attend, as our members are our best resources to spread the word about our program and our association. We hope that you will photocopy and distribute registration forms, the special "flyer" pages, and any other parts of the program that you think others will be interested in. We are particularly hopeful that you will share copies of the workshop pages with your local school administrators and teachers.

FRIDAY

Time	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincoln	Medill	Maximilian	#505	Blk-hwk
8:00-9:00am	**COFFEE** Division A Meeting	Division B Meeting	Division C Meeting	Division D Meeting	Division E Meeting	Division F Meeting	Division K Meeting				open for
9:00-10:00am								**General Business Meeting**	**EXHIBITS**		prac-tice with
10:10-11:40am	K: Paper *Early Field Experience*	H: Paper *Assessment Related Schools*	C: Paper *Cognitive Developmet*	D: Paper *General-izability Theory*	I: Sympos *Functional Assessment Rehab Med*	Workshop *Student Teaching Supervision*		**INVITED** *Culturally Compatible Classrooms*		Table Poster *Success & Inclusion*	over-head, work area
11:50-1:20pm			**PALACE LUNCHEON: GERALDBRACEY ROOM**								rest & Cont' Disc.
1:30-3:00pm	A: Paper *Admin. Critical Theory*	K: Paper *Early Field Experiences*	C: Paper *Study Strategies*	G: Paper *Student Attitudes*	E: Sympos *Student Perceptions & Success*	H: Sympos *Changing Education*	**BRACEY DISCUSSION GROUP**	Workshop *Teacher Evaluation Institute*			after ses-sions
3:10-4:40pm	A: Paper *Admin. Issues*	B: Paper *Methods for Teaching*	G: Paper *Family Context*	D: Sympos *Scoring Options*	K: Paper *Technology & Teacher Education*	J: Paper *Higher Education Success*	K: Sympos *University Faculty Teaching*	Workshop *Get/Keep Academic Position*	**Exhibits until 4:00 pm**		
4:50-6:20pm	G:Paper *Women's Voices & Dreams*	K: Paper *Cooperating Teachers*	H: Paper *Programs Assessed*	D: Sympos *Validity & Qualitative Research*	E: Paper *Facilitating Student Achievement*	K: Sympos *Preservice Preparation*	**FORUM** *School Change*	until 6:10pm		Wkshp *Letter of Appli-cation*	
9:00 pm			**REPRESIDENCY'S RECEPTION**								

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The Greatly Exaggerated Death of our Schools Gerald Bracey

INVITED GUEST at the MWERA LUNCHEON, Friday, October 13

GERALD BRACEY, Ph.D.

This talk will review trends of the SAT, achievement tests, national Assessment, and various international comparisons. The review will show that **American students perform at much higher levels** than has been alleged by many critics.

Palace Ballroom, **Bismarck Hotel,** 171 W. Randolph, CHICAGO, IL

Public Invited - **11:50 a.m.** - $23.00

Sponsored by the Mid-Western Educational Research Association

All attendees must pre-register with:
Jean W. Pierce, EPCSE Dept., NIU, DeKalb, IL 60115-2854
PH: 815/753-8470 FX: 708/232-1892 INTERNET: JPIERCE@NIU.EDU

* Please duplicate, distribute, and post this announcement 749

FRIDAY

Coffee 8:00 a.m.

F.8.A-L Division Meetings
(DIVISIONS A-F&K) **8:00-9:00 a.m**. Parlors A-F&L respectively
Discussion-bring your coffee and rolls and review past and plan future with your Division colleagues

F.9.ME Business Meeting
9:00-10:00 a.m. Medill
(General business meeting for all to attend-information, input, and graduate student awards)
CHAIR: *Thomas Andre, Iowa State University*
PARTICIPANTS: *All MWERA Members*

EXHIBIT HALL
9:00-4:00 p.m. Maximillan
Publisher and materials showroom
COORDINATORS: *Nancy Fellows and Ellen Fiedler*
Bring notices for jobs, mentoring and miscellaneous items for resources sharing table.

10:10 - 11:40 a.m.

F.1010.ME Creating Culturally Compatible Classrooms
(Invited Address) 10:10-11:40 a.m. Medill Room
PRESENTER: *Barbara Shade, U. of Wisconsin-Parkside*
This presentation will help the participants think about the impact of culture on classroom climate, the teacher-learner interaction, and the impact of thinking styles on the teaching-learning process. More important, participants will brainstorm and develop ideas which help address these cultural differences.

F.1010.A Early Field Experiences
(Division K-Paper Session) 10:10-11:40 a.m. Parlor A
CHAIR/DISCUSSANT: *Charles Runyan, Pittsburg State U.*
PARTICIPANTS:
Longitudinal Study of an Experimental Field-Based Pre-Service Elementary Education Program *Bernard W. Arenz, U of Texas-El Paso; David Brown, SW Missouri State U.*
Early Clinical Experiences: The Debate Between Continuity and Diversity *Elizabeth Wilkins, Audrey Edwards, Eastern IL U.*
Components of a Pre-Service First Year Experience: Focus on Preparation, Peer Advising, Portfolios, and Professional Attitudes *Donna Barron, Susan Ferguson, University of Dayton*

F.1010.B Various Assessments Related to Schools
(Division H-Paper Session) 10:10-11:40 a.m. Parlor B
CHAIR: *Sharon Latkovich, Ashland College*
PARTICIPANTS:
Assessing Elementary Teachers' Training in Teaching Science by Inquiry *Kathleen Sparrow, Akron City Schools*
The Transition Process From Middle School to High Schools: An Evaluation Study *Carol Furtwengler, Witchita State U.; David Hurst, Bill Furtwengler, Randall Turk, Witchita State U.*
A Comparison Among Four Methods Used to Test Single-Case Designs: A Monte Carlo Study *Isadore Newman, U. of Akron*
Teaching Language Arts: Perspectives from the College and Elementary Classroom *Elizabeth G. Biederstedt, Indiana U.*

F.1010.C Cognitive Development
(Division C-Paper Session) 10:10-11:40 a.m. Parlor C
CHAIR/DISCUSSANT: *Jennifer Fager, Western Michigan U.*
PARTICIPANTS:
Epistemological Beliefs and Valuing School: Touching the Heartstrings of Learning *Marlene Schommer, Kiersten Walker, Witchita State University*
Reconstructing the Paradigm of Learning Disabilities: A Holistic/Constructivist Interpretation *Betsy Grobecker, University of Southern Indiana*
Life-Span Developmental Psychology: Implications for Adult Education and Learning *Thomas L. Pourchot, Northern Illinois U.*

F.1010.D Generalizability Theory, Rasch, and Equating
(Division D-Paper Session) 10:10-11:40 a.m. Parlor D
CHAIR: *Julie Gedeon, Kent State University*
PARTICIPANTS:
The Validity and Reliability of Student Annotations of Work Samples in Portfolios *Susan M. Brookhart, Duquesne University*
National Database: Equating Scores Between the 1991 Long-Form Instrument and the 1994 Revised Instrument *Mohammed A. Rahman and William E. Loadman, Ohio State University*
A Comparison of Two Approaches of Estimating Reliability: Generalizability Theory and Rasch Model *William E. Loadman, Abdelhafez Q. Al-Shayeb, Ohio State University*
DISCUSSANT: *Susan Holmes, Riverside Publishing*

F.1010.E Applications of Functional Assessment in Rehabilitation Medicine
(Division I-Symposium) 10:10-11:40 a.m. Parlor F
CHAIR: *Gene A. Kramer, American Dental Association*
PARTICIPANTS:
Measuring the Extent of Disability With the FIM℠ *Alan Heinemann, Rehabilitation Institute of Chicago*
Using LifeScales™ to Assess Levels of Disabilty *Richard M. Smith, Rehab Fndtn, Inc. /Marianjoy Rehab Hospital and Clinics*
DISCUSSANT: *Benjamin D. Wright, University of Chicago*

F.1010.F Developing Research-Based Student Teaching Supervision Materials
10:10-11:40 a.m. Parlor F- Fee $5.00
(Fee waived if registered with full conference payment)
CHAIR: *Janet Bercik, Northeastern Illinois University*
PRESENTERS: *Donald Williams, Doug Smith, Hema Ramanathan, Laura Lipsett, Ohio State University*
* see description on workshop pages

F.1010.#505 Issues for Success and Inclusion
(Mixed Divs-Table Poster/Small Discussion Groups)
10:10-11:40 a.m. #505
CHAIR: *Richard Lipka, Pittsburgh State University*
PARTICIPANTS:
Cross-Modal or Cross-Hemispheric Deficits for Dyslexia? A Comparison of Average and Reading-Disabled College Students *Sharon K. Chambers, Iowa State University*
Prevalence of Attention Deficit Hyperactivity Disorder in Adults with Mental Retardation *Gholam Kibria, Delaware State U; Lew Miller, Stockley Center, Delaware*
Performance of Students in an Inclusion Setting *David E. Suddick , Irene Fioravanti, Governors State University*

F.450.D Validity in Qualitative Research: A Symposium
(Division D-Symposium) 4:50-6:20 p.m. Parlor D
CHAIR/ORGANIZER: *Marcia Salner, Sangamon State U.*
PARTICIPANTS:
Reene Ailley, U. Akron; John Creswell, Dana Miller, U Neb; Jeffrey Hecht, IL SU; Rich Hoffman, Peter Magolda, Miami U.
This is a symposium of five presentations. They are as follows: How Qualitative Research Makes Differing Demands on Validity Terminology; Important Methodological Steps to Improving Validity of Qualitative Results; Issues Such as Self-Deception and How it Differs from Benign Self-reflexivity; How to Relate Various Methods; How Technological Media Affect Validity of Researchers' Interpretations of Subjects' Experience

F.450.E Facilitating Student Achievement
(Division E-Paper Session) 4:50-6:20 p.m. Parlor E
CHAIR/DISCUSSANT: *Sharon E. Paulson, Ball State University*
PARTICIPANTS:
A Comparison of Standardized Measures of Achievement and Ability with Locally Normed Curriculum Based Measures of Reading in a High Achieving District *Ann Glesson, Ronald R. Morgan, Loyola University of Chicago*
School Achievement, Age, and Students' Perception of Parental Encouragement for Schoolwork *Jupian J. Leung, Daniel O. Lynch, UWis-Oshkosh*
The Family Interview: A Technique of Early Childhood Assessment *Barbara Lowenthal, Northeastern Illinois University*

F.450.F Learning to Become a Teacher: Exploratory Studies into the Phenomena of Pre-Service Preparation
(Division K-Symposium) 4:50-6:20 p.m. Parlor F
CHAIR/DISCUSSANT: *Jesse Goodman, Indiana University*
PARTICIPANTS:
Betsy Biederstedt, Marie Boozer, Susan Clayton-Randolph, Merrie Beth Fisher, Tammy Gooch, Evelyn Horn, Melody Shank, Indiana University

F.450.L A Relational Approach to School Change: Chicago Teachers Center/Chicago Public Schools
(Forum) 4:50-6:20 p.m. Lincoln
CHAIR/ORGANIZER: *Dean Micheal Carl, Northeastern Illiniois University*
PARTICIPANTS: *Wendy Stack, Elaine Koffman, Marilyn Koule George, Margie Neal, Jerry Olson, Mike Carl, Northeastern Illinois University*

President's Reception
Everyone is invited!
It's casual Soft beverages provided
9:00 p.m. until ? Regency Suite
HOST: *Thomas Andre, Iowa State University*
COORDINATOR: *Adria Karle-Weiss, MurraySU*

DID YOU KNOW THAT YOUR ATTENDANCE ON SATURDAY MAKES A BIG DIFFERENCE?

YES, DIVISIONS ARE ALLOCATED SESSIONS BASED ON THE NUMBER OF MEMBERS IN A DIVISION *AND* BASED ON THE ATTENDANCE AT SESSIONS.

IN THE PAST, SOME MEMBERS WHO HAVE BEEN VERY VITAL TO SESSIONS ON THURSDAY AND FRIDAY HAVE NOT COME TO SATURDAY SESSIONS, LOWERING ATTENDANCE COUNTS THAT DAY. THIS LEADS SOME TO BELIEVE THAT SATURDAY SESSIONS ARE LESS IMPORTANT.

SATURDAY SESSIONS ARE PUT TOGETHER JUST LIKE ANY OTHER SESSIONS. THEY WERE NOT RATED LOWER BY REVIEWERS, AND THE PRESENTERS ARE LOOKING FORWARD TO HAVING AN AUDIENCE. I HOPE YOU WILL BE THERE!

SATURDAY

Time	Parlor A	Parlor B	Parlor C	Parlor D	Parlor E	Parlor F	Lincoln	Medill	Maximillan	#505
8:00-9:00am		Division G Meeting	Division H Meeting	Division I Meeting	Division J Meeting	Division K Meeting				
9:00-10:00am									**Presidential Address: Andre**	
10:10-11:40am	A: Paper *Collabration & Prog. Initiative*	K: Paper *Preservice Teachers*	C: Paper *Motivation*	G: Paper *Teacher Attitudes & Interactions*	E: Paper *Special Needs Students*	K: Paper *Preservice Teacher Education*	TablePosters 10:00-10:50 & 11-11:40	Workshop *Self-Concept*	Discussion *Publishing*	F: Discussion *Contradiction in History*

SATURDAY

8:00 a.m. - 9:00 a.m.

S.8.B-F DIVISION MEETINGS
(Divisions G-K) Parlors B-F
Div G in Parlor B *Div I in Parlor D* *Div K (2nd Part) Parlor F*
Div H in Parlor C *Div J in Parlor E*

9:00 a.m. - 10:00 a.m.

S.9.Max

PRESIDENTIAL ADDRESS

Science, Gender and The Thinking School

SPEAKER: *Thomas Andre, Iowa State U.*

9:00 a.m. in the Maximillan Room

10:10 a.m. -11:40 a.m.

S. 1010.Max On Publishing in Educational Psychology
(Mixed Divs-Discussion Grp) 10:10-11:40 a.m. Maximillian
PRESENTER:
Paul Pintrich, Editor of the Educational Psychologist

S.1010.A Collaboration and Programmatic Initiatives
(Division A-Paper Session) 10:10-11:40 a.m. Parlor A
CHAIR: *Thomas Oldenski, The University of Dayton*
PARTICIPANTS:
Strategies that Promote Collaboration Between School Districts: A Study of School District Collaboration *Randall Turk, William Furtwengler, Carol Furtwengler, David Hurst, Wichita State U.*
The University and The School: A Leadership Model for Collaboration Inquiry *C.Stephen Oborn, Gay Lynn Shipley, UDayton*
Education Reform: Programmatic Initiatives in Indiana's Larger School Districts *Theodore J. Kowalski, Terry L.Wiedmer, BallSU*
DISCUSSANT: *Marilyn Grady, University of Nebraska at Lincoln*

S.1010.B Preservice Teachers
(Division K-Paper Session) 10:10-11:40 a.m. Parlor B
CHAIR: *Nancy Fjortoft, U of Illinois*
PARTICIPANTS:
Preservice Teachers Most Identified Needs and Most Troublesome Questions *Joy McCullough, Trinity Western U.*
Needs Assessment to Train Preservice Teachers: Using Two Factor Analytic Studies to Refine A Teacher Needs Assessment Instrument *Charles Runyan, Rozanne Sparks, David Hurford, Richard Lipka, Pittsburg State University*
Preservice Teachers' Change in Perceptions of Their Needs in a Two-Week Pre-Student Teaching Experience *Jacqueline K. Collier, Miami University*
DISCUSSANT: *Marilyn K. Urguhart, University of South Dakota*

S.1010.C Motivation
(Division C-Paper Session) 10:10-11:40 a.m. Parlor C
CHAIR/DISCUSSANT: *Gregory Schraw, U.Nebraska-Lincoln*
PARTICIPANTS:
Elements of Both Cooperation and Competition Within Learning Groups *Mary Lanigan, Indiana University*
The Relationships Among Prior Achievement, Motivational Characteristics, and Attitudes Toward Cooperative Learning *G.R. Overbey, Sarah E. Peterson, Northern Illinois University*
Subject Variables Related to Attributional Paradigm *Larry Krengel, Northern Illinois University*

S.1010.D Teacher Attitudes and Interactions
(Division G-Paper Session) 10:10-11:40 a.m. Parlor D
CHAIR/DISCUSSANT: *Clara New, U Wis-Parkside*
PARTICIPANTS:
Faculty and Student Attitudes Toward the Evaluation of College Teaching *Peter J. Brady, Clark State Community College*
Student-Instructor Interactions on Course Performance in Statistics: An Exploratory Study *Monica Silva-Raveau, Pontifica Universidad Catolica de Chile*
'The Nice Kind Teacher': A Kindergarten Teacher's Understanding of Her Role in Social Learning *Mandy Cole, Miami University*

S.1010.E Legal and Counseling Issues with Special Needs Students
(Division E-Paper Session) 10:10-11:40 a.m. Parlor E
CHAIR/DISCUSSANT: *Nina Dorsch, Northern Illinois U.*
PARTICIPANTS:
Legal Issues of Children with Health Care Needs and the Medical Nature of Related Services *Cynthia A. Dieterich, Cleveland State University*
Facilitated Communication: Failsafe, Fiction, or Fad? *Mark P. Mostert, Moorhead State University*
The Utility of Solution Focused Brief Therapy in Schools: Potential From an Initial Study *Deborah L. Mostert, SE Regional Service Ctr; Erin Johnson, Mark Mostert, Moorhead SU*

S.1010.F Preservice Teacher Education
(Division K-Paper Session) 10:10-11:40 a.m. Parlor F
CHAIR: *Connie Bowman, Ohio State University*
PARTICIPANTS:
Enhancing Preservice Social Studies Teaching With Computers *Ruth Koskela, Alex Pan, Judson M. Lyon, U Wis-Whitewater*
Teaching Language Arts: Perspectives from the College and Elementary Classroom *Elizabeth G. Biederstedt, Indiana U.*
Variety and Purpose of Adult Feedback to Children's Oral Reading Errors *Judy C. Lambert, Joyce H. Boettcher, UWis-Osh*
DISCUSSANT: *Toni Griego Jones, University of Wisconsin*

S.1010.Me Ways to Assess and Enhance Students' Self-Concepts. Medill - Fee $5.00
(Fee waived if paid conference registration)
PRESENTERS: *James R. Necessary, Ball State University; Thomas Parish, Kansas State University*
*see description on workshop pages

S.1010.#505 Contradictions in History
(Division F-Discussion) 10:10-11:40 a.m. Room #505
CHAIR/DISCUSSANT: *Louise Fleming, Ashland University*
PARTICIPANTS:
From Backwardness to At-risk: Childhood Learning Difficulties and the Contradictions of School Reform *Barry Franklin*
* A Presentation followed by Group Discussion

S.1010.L Culture and Measurement Issues
(Mixed Divs-Table Poster/Small Discussion Groups) Lincoln
10:10-10:50 a.m.
CHAIR: *Mian Yusuf, University of Wisconsin, Parkside*
PARTICIPANTS:
Factorial Validity of the Maslach Burnout Inventory for Taiwanese Secondary School Teachers *Jimmy Kijai, Jerry Chi, Andrews Unversity*
The Reliability of the Child Behavior Checklist for Minorities *Sharon A. Latkovich, Ashland University*
A Comparative View of Creole Across the Caribbean: Social and Educational Issues *Melissa Macdonald Manhertz, Stephen Franz, Indiana University*
Freedom, Success and Justice in Popular Culture: Lessons of the Media *Joan Thrower Timm, U of Wisconsin-Oshkosh*

11:00-11:40 a.m.
CHAIR: *Mian Yusuf, University of Wisconsin, Parkside*
PARTICIPANTS:
Measuring Attitude Toward Homework Cheating and Test Cheating in High School Students *Rich Hofmann, Keith Breckenridge, Thomas Moffitt, Marci Nichols, Miami University*
Using Structural Equation Modeling Analysis to Confirm the Underlying Dimensions of the New Michigan High School Proficiency Examination *Patricia Buczynski, MI Educ. Assessment Prog; Burton E. Voss, U. Michigan*
Effect of Motivation and Emotion on Cognitive and Affective Empathy *Changming Duan, Thomas Green, U. of Missouri*

11:00-Noon

S.11.B Program Committee Meeting
11:00 a.m. Blackhawk
All Division Chairs, those who want to provide feedback for this meeting, and for planning the 1996 meeting.

NOON: END OF CONFERENCE.
THANK YOU FOR ATTENDING.
HAVE A SAFE TRIP HOME
WE WILL PLAN ON SEEING YOU AT MWERA 1996
WATCH THE JANUARY ISSUE OF THE *RESEARCHER* FOR THE CALL FOR PROPOSALS AND FURTHER INFORMATION

S.12.B Board of Directors' Meeting
12:00 noon Blackhawk
All current Board of Directors. The meeting may last until 5 p.m.

THE 1996 MWERA PROGRAM CHAIR IS KIM METCALF. IF YOU WOULD LIKE TO HELP ON THE CONFERENCE, OR WANT MORE INFORMATION, CONTACT HIM.

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SESSION DESCRIPTORS:

Accountability F.310.C
Action Research T.1150.B
Adaptive Testing T.310.A
Administration F.310.A
Adult Education F.1010.C
Art Education F.310.B
Asian Americans T.1010.C
Assessment methods T.310.D, F.450.C
-Alternative T.1010.D
-Educational T.310.D
-Functional F.1010.E
-Performance T.1010.D, F.1010.E
-Statewide T.1010.D
At-Risk S.1010.#505
Attitudes T.1150.ME, S.1010.B, S.11.L
-Social T.1150.E
-Student F.130.D
Attribution T.450.MAX, S.1010.C
Bias T.450.B
Career F.450.C
Case Studies T.130.D, T.450.A., F.130.A
Censorship T.1130.A
Change F.130.A
-Educational F.130.F
Charter Schools T.130.A
Cheating T.450.L
Cognitive Development T.1150.E, F.1010.C
Cognitive Strategies F.130.C
Collaboration T.310.L, T.410.Max, S.1010.A
-Interdistrict S.1010.A
-Univeristy S.1010.A
Comparative Statistical Methods T.1150.D, F. 310.D
Component Analysis T.310.A
Computer Technology T.310.B, T.410.MAX, T.450.D
-networks F.310.E
Concept Attainment F.310.B
Conflict Resolution T.450.L
Constructivism F.1010.C
Content Area Teaching S.1010.F
Cooperative Learning S.1010.C
-Teaching F.450.B
Criterion Referenced Assessment T.310.D
Critical Theory F.130.A
Differences T.450.B
Disabilities T.130D, F.1010.E
-Learning F.1010C, S.1010.#505
Discrimination T.450.B
Distance Learning T.1150.A., T.130.E
Education
-Early Childhood T.450.L
-Multicultural T.1010.C., T.1150.E., F.450.A
-Science T.1150.ME, T.1150.L, T.1150.F, F.130.F., F.450.E
-Teacher T.1150.B, T.1150.F, T.310.E, T.310.L, T.450.C, F.1010.A, F.1010.B, F.310.E, F.450.B, F.450.F, S.1010.B, S.1010.F
Educational Opportunity T.1150.A
Engineering T.1150.A
Environment T.1150.L
Epistemology F.1010.C
Evaluation T.1150.L, F.1010.B, F.130.F
-Course S.1010.D
-Faculty S.1010.D
-Student W.1.F, F.310.L
-Teacher W.1.D, F.310.A
Equating T.130.D
Family F.450.A
Field Experience F.1010.A, F.130.B, F.450.B
Gender T.1150.C, T.410.MAX, T.450.B
-Equity T.11150.A
-Stereotypes F.130.D
Generalizability Theory F.1010.D
Glass Ceiling T.1010.C
Hierarchical Linear Modeling T.450.MAX
History T.130.C., T.310.#505
Identity Formation F.310.C
Inclusion T.450.A, F.130.D
Individual Differences T.1150.C
Inquiry S.1010.A
Instruments T.130.D., S.1010.L
-Development S.1010.L
Intelligence T.1150.C., F.130.D
Interactive Learning T.130.E
Interdisiplinary T.450.MAX
Interpersonal Relationships T.1010.B
Immigrants F.450.A
Item Formats T.1010.D
Job Satisfaction T.310.MAX
K-12 T.450.A, S.1010.A
Law T.130.A
Leadership T.450.A
Learner-centered W.1.ME, W.1.L
Literacy T.310.C
Literature T.1150.C, F.310.C
-Based Instruction T.310.B
Math T.1150.ME, F.130.F, F.450.C
Measurement T.1010.D, T.130.D, T.310.D, F.310.D
Medical Performance Exams T.310.A
Mentoring W.1.E, T.1010.ME
Middle Schools F.1010.B
Minority Students T.1010.C, T.1150.ME
Mnemonics F.130.C
Monte Carlo Methods T.1150.D, T.130.D
Moral Development T.450.L
Motivation T.450.MAX, S.1010.C,S.11.L
Parent Involvmentq F.310.C
Peer Coaching F.130.B
Perceptions S.1010.B
Portfolios W.1.F, F.1010.B
Policy Analysis T.310.B
Power and Robustness T.1150.D
Practitioner Research T.1150.B
Preservice Teachers T.1150.F, T.310.E, S.1010.B
-preparation T.1010.A, F.1010.A, F.450F, S.1010.F
Principals T.450.A
Programmatic Initiatives S.1010.A
Psychology T.1010.A, T.450.MAX
Public Relations T.310.MAX
Private Education F.450.A
Rasch Analysis T.130.D, T.310.A, F.1010.E
Reading T.310B, T.310.C
Reform T.130.C, S.1010.#505
Regression W.1.B
Rehabiliation Medicine F.1010.E
Reliability Studies S.1010.L
Representations F.130.C
Research
-Educational T.450.MAX
-Methods T.450.D
-Narrative T.130.L
-Paradigm T.130.L
-Qualitative T.130.L, F.450.D
-Quantative T.130.L
-Sociolinguistic T.130.L
Retention F.450.C
Revising T.310.C
School
-Climate T.1010B, T.1010.C
-Development T.1010.B
-Finance Equity T.310.MAX, F.310.A
-Funding T.310.MAX, F.130.A
Self-esteem W.1.E, T.1010.ME
Social Learning S.1010.D
Spatial Abilities T.1150.C
Spatial Cognition T.310.A
Spatial Representations F.130.C
Special Education T.450.C
State Trends T.130.A
Statistics T.1150.C, T.130.E
Statistical Analysis T.1150.D
Stress T.450.MAX
Student Interaction T.450.L
Student Perceptions T.1010.B
Student-Teacher Interaction S.1010.D
Study Strategies F.130.C
Superintendents T.310.MAX, F.310.A
Supervision F.130.B, F.450.B
Teacher
-Development F.450.F
-Effectiveness F.310.L
-Preparation T.310.E
-Roles S.1010.D
-Values T.310.B
-Styles T.130.E
Technology T.450.D
Test Results T.310.D
Traditions T.310.#505
Training T.1150.A
University Teaching F.310.L
Urban/Rural School F.310.a
Validity W.1.D, F.450.D, S.1010.L
Violence T.130.A
Weighted-Option Scoring F.310.D
Writing T.310.C
Women Administrators F.130.A
Women's Issues F.310.C, F.450.A

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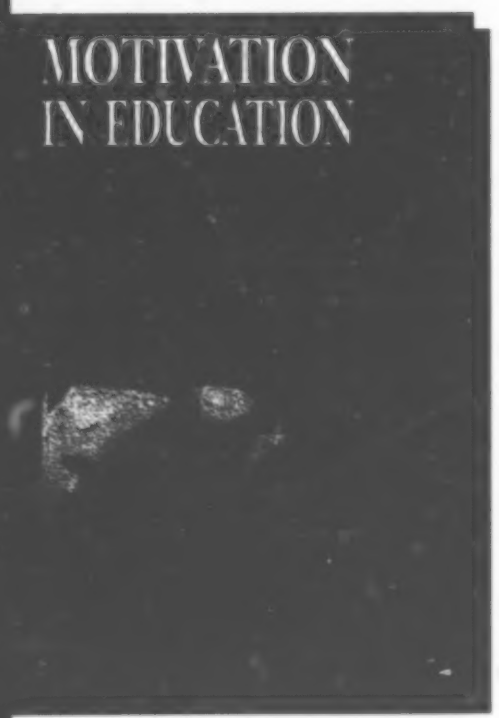

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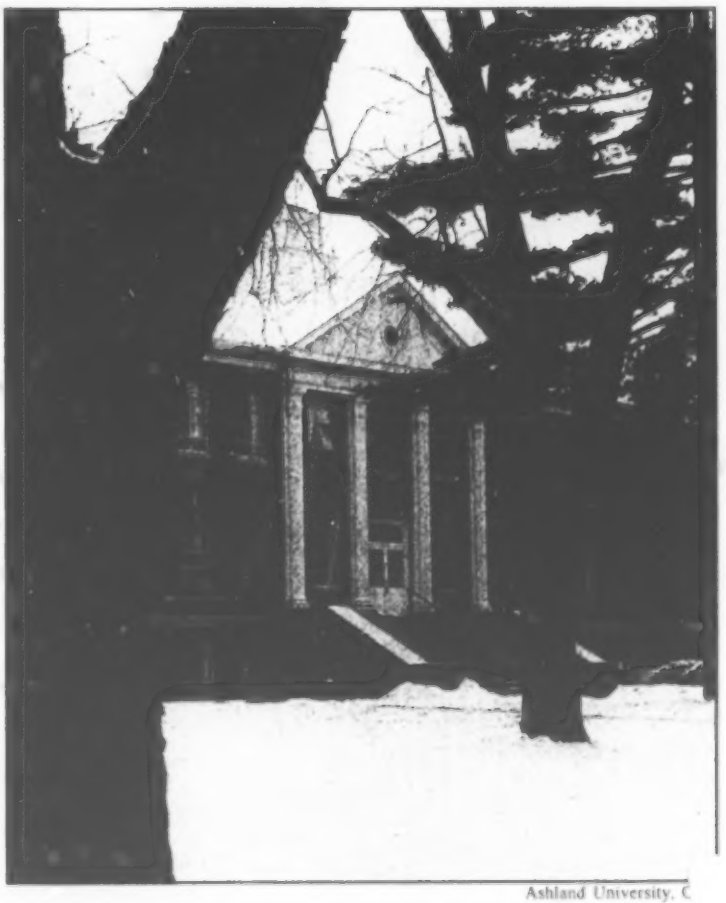

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Introduction to Special Issue on Midwestern History

Guest Editors:
Louise E. Fleming, Ashland University
Kathleen A. Murphy, Indiana University-Purdue University, Fort Wayne

2

The Impact of the Differentiated Curriculum on African American Women High School Students: The Case in St. Louis

Karen L. Graves, Denison University

3

Federal Aid, Black Separatism, and the Public Schools

Joseph Watras, University of Dayton

10

From Matron to Maven: A New Role and New Professional Identity for Deans of Women, 1892 to 1916

Jana Nidiffer, University of Massachusetts, Amherst

17

Consolidation Comes to Ashland County, Ohio

Louise E. Fleming, Ashland University

25

The Children of the Dream: Postwar Planning for The First Camp of the Children's International Summer Villages Organization

James L. Green, College of Mount St. Joseph

28

Introduction To Another Voice: Educational Life-Writing As Responsible Text

Elizabeth K. Johnson, Eastern Michigan University
Lucy F. Townsend, Northern Illinois University

32

Overview of the 1995 MWERA Annual Meeting

Sharon L. McNeely, Northeastern Illinois University
Program Chair

39

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Introduction to Special Issue on Midwestern History

Guest Editors:
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This issue is devoted to current work in the field of educational history. We have specifically sought out new researchers in the field of educational history, i.e., graduate students, recent graduates, and previously unpublished scholars whose work has focused on underrepresented groups, such as those defined by race, ethnicity, gender, and class. We have also targeted educational history of the Midwest, for we feel there are few outlets for research about this region.

The first two selections by Karen L. Graves and Joseph Watras respectively, focus on aspects of midwestern educational history related to race. Graves researches curricular choices of African American women in the high schools of St. Louis, Missouri, early in this century; Watras studies the effects of federal intervention programs on desegregation in Dayton, Ohio, in the late 1960s.

Jana Nidiffer leads us to the realm of higher education. By researching the career development of four women, Nidiffer chronicles the evolving profession of deans of women students at the turn of the century in Midwestern universities. With Louise E. Fleming we look at one-room country schools and their consolidation as experienced by several students and teachers in Asland, Ohio. James L. Green's work centers on the founding of a children's international summer camp in Cincinnati, Ohio, in the 1940s.

Finally, we have included a piece by Elizabeth K. Johnson and Lucy F. Townsend, which speaks to the concept of listening historically to other voices. The authors critique the current emphases of educational history and make a plea for more variety of form in historical writing. They especially encourage life-writing, or biography.

As a group these historical writings offer a wide range of method, scope, and perspective. We applaud the researchers' efforts, as well as the initiative of the *Mid-Western Educational Researcher*, for generating this special forum on educational history of the Midwest.

The Guest Editors

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The Impact of the Differentiated Curriculum on African American Women High School Students: The Case in St. Louis

Karen L. Graves, Denison University

Abstract

Historians have tagged the transformation to the differentiated curriculum as an influential factor in the shaping of the twentieth-century high school in the United States. Although gender, race, and social class affected the way in which a student's education was altered by the differentiated curriculum, the impact of the differentiated curriculum on African American women high school students has not been studied extensively. This paper examines the effect of the differentiated curriculum on African American women's course selection in St. Louis public high schools from 1914 to 1930. Conclusions drawn here both confirm and challenge the existing literature on women's secondary education.

The implementation of the differentiated curriculum in public high schools marked a transformative moment in the history of education in the United States. Although advocates of the differentiated curriculum early in the twentieth century argued that diverse courses of study would better meet the individual needs of students, historians have exposed social class and ethnic biases as fundamental components in this school reform. Rather than accept the changes in curricula as a "democratic" attempt to establish equal educational opportunity, many scholars understand this development, which had a profound influence on secondary schooling in the twentieth century, as a form of social control intended to stabilize the U.S. corporate economy and to protect a national agenda created by a power elite (Anderson, 1988; Bowles & Gintis, 1976; Kantor, 1988; Kantor & Tyack, 1982; Karier, 1986; Katz, 1975; Spring, 1989; Violas, 1978).

Much of the early critical scholarship on the differentiated curriculum focused primarily on its impact on working-class and immigrant students. Ironically, although girls comprised the majority of high school students in the decades surrounding the introduction of the differentiated curriculum, gender has been little used as a lens for examination of this major policy change. Recent work which has targeted gender as a crucial issue in the study of the differentiated curriculum has advanced knowledge of the philosophy, politics, and practice underlying this mainstay of the U.S. education system. Books by Jane Bernard Powers (1992) and John Rury (1991) have proven particularly significant additions to the field; each work reflects an appreciation for the complexity of the issues under observation. Yet, within the body of work now being produced on gender and the differentiated curriculum, the experiences of African American students have been attended to only peripherally.

In 1916 there were only 64 high schools in the United States open to African Americans (Bond, 1934). In that year the states of Georgia, Louisiana, Mississippi, North Carolina, and South Carolina provided no publicly supported high schools for African Americans; Delaware, Florida, and Maryland claimed one each (Anderson, 1988). As James D. Anderson (1988) documents in his history, *The Education of Blacks in the South*, only a small percentage of African American youth had access to secondary schooling until the middle of the twentieth century. The relatively small number of high schools available to African American students may help explain why so little research has been conducted on the effect of the differentiated curriculum on African American women's education. Another difficulty is that social scientists often failed to include African American students in their surveys. For instance, George Counts included St. Louis in his survey, which Rury (1991) refers to as the only study of the period to examine systematically the manner in which students were distributed across different high school courses in a number of urban contexts. Unfortunately, Counts (1922) gathered incomplete data on St. Louis African American students and did not wholly incorporate their high school experiences into his results. In spite of such challenges, information on how the differentiated curriculum transformed African American women's secondary education promises to illuminate key issues in the history of women's education as well as the history of African American education. Scholars in both fields have commented on schooling as training for domestic service for African American women (Anderson, 1988; Giddings, 1984; Powers, 1992; Rury, 1991; Tyack & Hansot, 1990). Little has been written, however, on how African American women students fared in public high schools during the *transition* from the traditional academic curriculum to the differentiated curriculum. This study provides an analysis of the high school course-taking patterns of African American women students in St. Louis, Missouri during the transition to the differentiated curriculum.

The public school system of St. Louis provides an excellent opportunity for study. The city of St. Louis enjoyed national prominence in the last decades of the nineteenth century. Its diverse industrial economy mirrored economic conditions in cities in the Northeast while its social flavor contained strong elements of the American South. One might expect, then, that rationale for high school attendance reflected both a desire for advancement in the workplace and an aspiration for education for "race uplift" (Perkins, 1983;

Rury, 1991). The public school system in St. Louis earned national recognition during the superintendency of William Torrey Harris (1868 to 1880) and maintained its status well into the twentieth century. In 1885, St. Louis school officials announced the first commencement exercises for Sumner High School, the first public high school for African Americans west of the Mississippi River. Therefore, public secondary schooling for African Americans in St. Louis can be traced to the decade which witnessed the first great surge in public high school development in the United States.

Missouri's state constitution, written after the Civil War, provided for the establishment of separate schools for children of African descent. Sumner High School was officially founded in 1875, some two decades after Central High School opened in St. Louis for European American students. Sumner remained the only public high school available to African American students in St. Louis until Vashon High School initiated classes for the 1927-28 school year. Given that African Americans had been legally barred from all education prior to the Civil War in Missouri, early high school enrollments for African Americans in St. Louis were low. With some years of exposure to elementary schooling, however, attendance at the high school began to catch up with the enthusiastic commitment St. Louis African Americans made to learning (Gersman, 1972). Students at Sumner High School soon represented a percentage of the total high school enrollment in St. Louis which reflected the African American percentage of the city's population. Sumner High School students accounted for 8 percent of the St. Louis public school enrollment in 1905, 10 percent in 1915, and 11 percent in 1925 (Graves, 1993).

Although formally established in 1875, Sumner High School forged its identity as a secondary institution in the 1880s. The nineteenth-century philosophy of Sumner High School reflected the ethos of African American schooling in the decades following the Civil War (Anderson, 1988; Karier, 1986; Krug, 1969; Perkins, 1983; Tyack & Hansot, 1990). In 1882, St. Louis educators pledged that "The Sumner High School must do its share to train the future leaders of the race, so that they may be men and women of good intelligence and pure character" (St. Louis Annual Report, 1904, p. 159). Many Sumner graduates, most of whom were women, elected to make their contributions as teachers. Over half of the Sumner High School graduates from 1895 to 1909 became teachers or enrolled in normal schools (Graves, 1993).

From 1885 to 1911 the General and Normal courses of study constituted the curriculum at Sumner High School. Beginning in 1911, Sumner students took classes as determined by the General, Classical, Scientific, Commercial, Art, Domestic Art and Science, or Manual Training courses of study; graduates were distinguished by these courses of study until 1930. It is important to note, however, that Sumner High School added a Department of Domestic Science for women and sent male high school students to the L'Ouverture Elementary School for manual training classes in 1899. Two years later Sumner principal, Oscar Waring, commented that the "success which has attended the introduction of Manual Training and Domestic Science, has undoubtedly given these branches a permanent place in our schools" (St. Louis Annual Report, 1902, p. 84).

The shift to a curriculum which included more "practical" studies paralleled a similar change at Central High School and reflected elements of the educational policy debate on the secondary school curriculum being carried on at the national level. With this transformation, those who directed policy altered the objectives endorsed by Sumner High School in the nineteenth century: to prepare students for college and for teaching in the St. Louis elementary schools for African American children.

Sumner High School's reputation as an academic institution extends back to its first graduating class in 1885. On more than one occasion the St. Louis Annual Reports attest to the fact that an equal level of scholarship and educational attainment was expected of students from Sumner and Central High Schools. Such rhetoric was supported by a variety of evidence. For instance, the 1901 Annual Report noted that Sumner High School was equipped with "as well appointed a chemical laboratory as any High School in the State" (St. Louis Annual Report, 1902, p. 85). In addition, school officials reported that Sumner High School graduates had continued study in almost every college in the United States which accepted African American students (Graves, 1993). Further, historian Horace Mann Bond selected Sumner High School as an example of a superior high school among large, segregated city school systems (Bond, 1972).

The sterling record of academic achievement identified Sumner High School as an outstanding secondary educational institution in the late nineteenth and early twentieth centuries. Yet, whereas educators were eager to emphasize similarities in the courses of study between public high schools for African American and European American children in St. Louis prior to the implementation of the differentiated curriculum, a different rhetoric emerged in the 1920s. In 1928 the St. Louis Annual Report clearly stated that "the law requires that both white and negro children must be afforded equal educational opportunities. It should be noted that equal educational opportunity does not necessarily imply the same educational opportunity" (St. Louis Annual Report, 1928, p. 546). As Paul Violas (1978) discusses in *The Training of the Urban Working Class*, the phrase "equality of educational opportunity" entered the educators' lexicon as the differentiated curriculum reconstructed the high school curriculum. It replaced the notion of "equal education," a pillar of nineteenth-century educational philosophy which had been upheld in 1894 by the National Education Association Committee of Ten. By emphasizing "opportunity," schools offered different and unequal education to students, opening the door to gender, race, and social class discrimination. A February 5, 1933 article in the St. Louis Globe-Democrat titled a report on one "opportunity" available to students at Vashon High School with the words, "Where Waiters Are Trained" (Graves, 1993). School officials thought it proper to devote

class time to the "scientific" study of restaurant service. Such decisions expose a philosophical reconstruction of the objectives of secondary education which repudiated study aimed at intellectual and character development. The emerging philosophy effected one of the most significant policy changes in twentieth-century American education. How did African American high school women fare in the curricular conversion which followed in St. Louis?

One way to determine the degree of impact that the differentiated curriculum had on the education of African American women in St. Louis is to examine percentages of high school graduates in various courses of study from 1914 to 1930. See Table 1. Since Sumner High School introduced the differentiated curriculum in 1911, 1914 marks the first year that African American graduates were distinguished by course of study in the St. Louis Annual Reports. The class of 1930 was the last group of graduates to be identified by course of study. The information in Tables 1,2, and 3 indicates that both gender and race were factors which influenced the course of study taken by African American women high school graduates in St. Louis.[1]

African American women graduates completed the General Course more often than any other course of study in the years from 1914 to 1930. Only in 1919 and 1920, years following the 1917 passage of the Smith-Hughes legislation which provided federal funding for vocational education, did more women graduate from the Domestic Art and Science Course than the General Course at Sumner High School. The high percentages of African American female graduates in the General Course (one-half or more in twelve of the seventeen years from 1914 to 1930) suggest that the legacy of education for "race uplift" continued to influence young women who were making decisions concerning secondary schooling. The General Course, with more emphasis on academic subjects than the Domestic Art and Science or Commercial Courses, was better able to satisfy the "great desire for education" that Paula Giddings (1984) discusses in *When and Where I Enter* (p. 101). Many women looked to an academic education to provide "an escape from the limitations that society imposed" on them (Giddings, 1984, p. 101). Gender appears to have been a key factor in this course-taking pattern; European American women also graduated from the General Course more often than from any other course of study. Fewer percentages of African American men, however, graduated from the General Course in these years. Rarely did more than one-third of Sumner male graduates complete the General Course (Graves, 1993).[2]

It is important to note that, while the General Course may have been perceived as the avenue of study which maintained a connection to the academic curriculum of the nineteenth century, it was not considered the most rigorous course of study when compared to new additions to the high school curriculum. Shortly after Central High School expanded its curriculum to include the Scientific and Classical courses of study (which occurred about a decade before these courses were offered at Sumner High School), the St. Louis Post-Dispatch (1904) proclaimed that the "general course is not considered as difficult as the scientific or classical course, as it gives students more freedom in selecting branches of study." The following year the St. Louis Annual Report (1906) confirmed this statement in a description of the various courses of study. Listed under the heading of "The Best General Education" and "recommended in the order in which they are here given" were the Scientific, Classical, General, and Art Courses (pp. 201-202). The striking observation from Table 3 is the disparity between the percentages of male and female graduates who finished the Scientific Course. No more than 3 percent of African American or European American women graduated from the course labeled "The Best General Education" in St. Louis from 1914 to 1930. Gender was clearly a factor here since both African American and European American males graduated from the Scientific Course in double-digit percentages frequently throughout this period.

African American and European American women, then, were quite likely to graduate from the General Course and not likely to select the Scientific Course. Race, however, appears to have been a significant factor regarding other courses of study. A higher percentage of African American women graduated from the Domestic Art and Science Course than the Commercial Course fifteen out of the seventeen years from 1914 to 1930. The pattern was reversed for European American women; more European American women graduated from the Commercial Course than the Domestic Art and Science Course in all but six years in this period.

While the Domestic Art and Science Course was not generally the dominant course of study for African American women graduates in St. Louis, rather high percentages of women did finish this course. The percentages were in double-digits for fifteen of the seventeen years from 1914 to 1930, reaching a high of 52 percent in 1919. While secondary schooling in the St. Louis public high schools did not reflect the Booker T. Washington philosophy of education which spread through the South after his Atlanta Exposition Address in 1895, pragmatic elements regarding the economic value of schooling filtered in some way to most schools. Giddings' (1984) point that "Funds for Black schools were easier to come by if one's curricular 'buckets' were cast in the Washingtonian mold" is well taken (p. 101). In addition to the advocates of home economics, who preached thrift and morality lessons, were the voices of those such as Mary Church Terrell who looked to the professionalization of domestic work as one solution to the labor problem encountered by African Americans early in the twentieth century (Anderson, 1988; Giddings, 1984). The data on European American women's enrollment in the Domestic Art and Science course of study provided a contrast to the pattern established by African American women. As the information in Table 2 shows European American women graduated from the Domestic Art and Science Course in double-digit percentages only in the seven years from 1914 to 1920. The highest percentage ever reached was 26 percent in 1917.

Table 1: Percentages of African American Women Graduates in Various Courses of Study in St. Louis Public High Schools, 1914 to 1930

Year	General	Domestic Arts & Sciences	Commercial
1914	0	42	7
1915	36	22	0
1916	75	19	2
1917	61	29	0
1918	58	31	5
1919	38	52	5
1920	46	44	6
1921	55	35	2
1922	35	27	25
1923	64	20	14
1924	50	21	25
1925	65	13	10
1926	74	13	5
1927	81	6	8
1928	72	21	3
1929	70	16	9
1930	94	4	0.9

Source: St. Louis Annual Reports.

Table 2: Percentages of European American Women Graduates in Various Courses of Study in St. Louis Public High Schools, 1914 to 1930

Year	General	Domestic Arts & Sciences	Commercial
1914	26	17	8
1915	30	25	8
1916	39	22	13
1917	45	26	13
1918	57	23	10
1919	54	30	12
1920	61	11	13
1921	51	8	11
1922	45	6	15
1923	43	5	17
1924	44	5	18
1925	48	6	19
1926	51	5	17
1927	51	6	14
1928	56	4	14
1929	69	3	13
1930	95	0.5	2

Source: St. Louis Annual Reports.

Table 3: Percentages of St. Louis Public High School Graduates in the Scientific Course, by Sex and Race, 1914 to 1930

Year	African American Women	African American Men	European American Women	European American Men
1914	1	22	2	11
1915	0	0	1	13
1916	2	13	0.2	19
1917	0	15	1	13
1918	1	13	1	10
1919	3	21	1	15
1920	0	14	2	21
1921	1	0	0.8	12
1922	0.7	14	0.8	8
1923	0.9	6	0.4	6
1924	0.8	10	0.3	6
1925	1	17	0.5	7
1926	0	19	0.2	7
1927	1	13	0.4	9
1928	1	16	0.1	8
1929	0.5	12	0.1	6
1930	0	0	0	1

Source: St. Louis Annual Reports.

Few African American women graduated from the Commercial Course in St. Louis. With the exception of the years 1922 to 1925 when ratios ranged from 10 to 25 percent, less than 10 percent of African American women graduated from the Commercial Course. Again, a different pattern emerged for European American students. European American women graduated from the Commercial course of study in double-digit percentages fourteen times between 1914 and 1930. Employment figures for St. Louis support the conclusion that women's options in the labor force made an impact on course selection. In 1910, 99 percent of women employed in clerical occupations in St. Louis were European American. Only 38 African American women were hired for the 10,082 clerical positions reported in the census. Ninety-two percent of all African American women in the St. Louis paid labor force were hired as domestic laborers (U.S. Bureau of the Census, 1914). To the extent that a female student's schooling was intended to prepare her for the paid work force, race was a major determinant in course selection.

The course-taking pattern of African American women in St. Louis high schools from 1914 to 1930 both confirms and challenges aspects of recent theories in the areas of women's educational history and the history of African American education. Rury's (1991) work stands in the forefront of those who have argued that the differentiated curriculum created a gender-segregated high school curriculum (Powers, 1992; Tyack & Hansot, 1990). Evidence from St. Louis supports this point. Few African American women students graduated from the Scientific Course once it was finally offered at Sumner High School. Fewer than 2 percent of African American women graduates took the Scientific Course in all but two years in the period from 1914 to 1930. In contrast, over 10 percent of African American men in St. Louis graduated from the Scientific Course during most of these years. The course of study taken most often by African American women, the General Course, was not a popular course for African American men; the highest percentage of African American men who graduated from the General Course from 1914 to 1930 was 39 percent in 1927. In point of fact, fewer than 30 percent of male graduates finished the General Course for most of these years (Graves, 1993). The course of study taken most frequently by African American women (following the General Course), Domestic Art and Science, was a course designed exclusively for women. Thus, after the advent of the differentiated curriculum, the vast majority of African American women high school graduates in St. Louis enrolled in courses of study which were selected by few men. While women and men often studied in the same classrooms together (many classes were required across all courses of study), gender was a significant factor in determining a student's course of study.

Historians disagree on the importance of this phenomenon. Tyack and Hansot (1990) admit that the public high school of the 1920s clearly evinced more sex differentiation than its nineteenth-century counterpart; however, they claim that segregation by gender occurred only on the periphery of the curriculum. Their argument discounts the hidden messages embedded in a gender-segregated curriculum. Powers (1992) extends a different interpretation. She writes that although home economics courses never measured up to the social-efficiency ideal promoted by reformers in the first decades of the twentieth century, it did become a standard offering in most junior and senior high schools in the United States. As a result, women's enrollments in mathematics and science courses dropped after 1900 and a legacy of gender segregation in the high schools was established (Powers, 1992). Statistics concerning African American women's enrollments in the Scientific, Domestic Art and Science, and General Courses in St. Louis support these points. Women's participation in the Scientific course of study was minimal and women's dominance in the General and Domestic Art and Science courses very likely strengthened the consciousness of a gender segregated curriculum. Unlike Tyack and Hansot's thesis, Powers' argument acknowledges the force of rhetoric in forming one's educational experiences. She makes a strong case that myths are "at all times a powerful shaping force" (Powers, 1992, p. 9).

St. Louis data on African American and European American women graduates' enrollments in the Domestic Art and Science and Commercial courses of study also support Rury's (1991) second major conclusion, that the differentiated curriculum reproduced the social division of labor within the female work force. Hiring patterns in St. Louis funneled most African American women into domestic service and reserved clerical work for European American women. Course-taking patterns in St. Louis high schools reflected this economic reality as more African American women graduated from the Domestic Art and Science Course than the Commercial Course, while the reverse was true for European American women. Undoubtedly, given that only 0.3 percent of women with clerical positions in 1910 were African American, women in St. Louis shared the experience of Addie W. Hunter, a graduate of the Cambridge Latin and High School. Writing in 1916 on her unsuccessful lawsuit to gain a clerical position for which she was qualified, Hunter commented, "For the way things stand at present, it is useless to have the requirements. Color—the reason nobody will give, the reason nobody is required to give, will always be in the way"(Jones, 1985, p. 179).

Although African American women graduated from the General and Domestic Art and Science Courses in far greater numbers than the Commerical Course, the data from St. Louis do challenge the trend regarding commercial subjects in one way. Powers (1992) reports that only 2 percent of all African American high school students were enrolled in commercial courses in 1925. In St. Louis, however, 1925 capped off a four-year period in which African American women graduated from the Commercial course of study in double-digit percentages. Furthermore, in twelve of the seventeen years from 1914 to 1930, the percentage of African American women graduates in the Commercial Course in St. Louis exceeded the 1925 national average.[3]

The record of African American high school graduates in St. Louis further advances our understanding of the effects of the differentiated curriculum on women with the information it provides on Domestic Art and Science. Histories of women's experiences with the differentiated curriculum, thus far, stress the prominent place home economics was given in African American women's education (Powers, 1992; Rury, 1991; Tyack & Hansot, 1990). Certainly, this point is upheld by the St. Louis data. Domestic Art and Science did account for a substantial percentage of African American female graduates; however, perhaps an equally vital point is that, for the period under examination, most women graduated from the General Course, rejecting the Domestic Art and Science course of study. Evidence from other high schools in this period is needed to determine the extent to which Domestic Art and Science courses did, indeed, dominate African American women's education.

It is probable that the impact of the differentiated curriculum on African American women's secondary education varied by geographic region and the histories of various institutions. Anderson's comprehensive study of African American education in the South documents that as African Americans lost political and economic power in the post-Reconstruction years, they lost substantial control of public schools. A second-class education emanated from a social ideology designed to foster conformity to racist forms of political and economic subordination (Anderson, 1988). It is logical to suspect that the differentiated curriculum in southern high schools for African Americans, where they existed in the early years of the twentieth century, channeled women students into Domestic Art and Science courses. Thus, high school for most African American women became training for domestic work. Rury (1991) states that this is the pattern which developed in Memphis. In high schools for African American students with an established history of first-class academic education, however, the differentiated curriculum probably affected women students in a different manner. One such institution was The M Street School in Washington, D.C. Students there became well-known for their academic achievements, and attended the most prestigious universities in the United States. Principal Anna Julia Cooper took a stand against the movement to weaken the academic content of the high school curriculum and it cost her her job in 1906 (Giddings, 1984).

Evidence from St. Louis high schools suggests that the differentiated curriculum did not affect all African American students in the same way, nor did it affect African American students exactly as it affected European American students. Further study of curriculum development in schools such as Sumner High School and The M Street School is needed to fully understand the influence the differentiated curriculum brought to bear on secondary education in the United States. How many schools were able to maintain Cooper's vision of an academic education, and for how long? Was the African American legacy of education for "race uplift" strong enough to hold off the economic pull on schooling? How much did African American students' educational experiences vary across different types of institutions and in different regions of the country? The issues involved in the introduction of the differentiated curriculum are complex; they are embedded in a network of political, social, and economic forces. Knowledge about the high school experiences of African American women will sharpen our assessment of the impact of the differentiated curriculum on secondary education in the United States and on the lives of the students who were thus schooled.

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[1] Since few African American women graduated from the Art or Classical Courses, these courses of study will not be addressed in this study.

[2] A substantial percentage of male graduates from Sumner High School in the years from 1914 to 1930 completed the Manual Training Course; the Scientific and Commercial Courses also claimed a significant percentage of African American men graduates. The General Course claimed an increasingly larger percentage of women high school graduates and European American men graduates in the five years leading up to 1930. The percentage of African American men who graduated from the General Course remained under 40 percent during this period, until 91 percent of African American men graduated from the General Course in 1930. Perhaps students were encouraged to select the General Course a few years before the practice of recognizing graduates by other courses of study was eliminated.

[3] Further research may disclose the conditions in St. Louis which prompted the above-average enrollments in the Commercial Course.

Please Plan to Attend Our :

- **MWERA Association Council Meeting, Thursday, October 12, 3:10 - 4:40 pm, Medill Room**
- **MWERA General Business Meeting, Friday, October 13, 9 - 10 am, Medill Room**

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Federal Aid, Black Separatism, and the Public Schools

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Abstract

In 1967, President Johnson announced the creation of the Model Cities program to give special grants to cities that developed comprehensive plans enlisting federal, state, local, and private resources to transform blighted areas into useful ones. Dayton, Ohio was among the first cities to have such a program, and it was directed by African American residents from the section known as the inner west. While these community activists instituted important reforms within the schools and the neighborhoods where low income African American families lived, they frustrated efforts to racially desegregate the public schools. Consequently, the story of Dayton's Model Cities Demonstration Project raises the important question whether urban renewal and school improvement can be accomplished while maintaining segregated conditions.

In northern cities, the civil rights movement had at least two parts. One part was the legal suits the NAACP directed against segregated school districts. The legal cases in the north tried to dismantle the racial segregation of schools caused by racially separate neighborhoods. For example, in *Milliken v. Bradley*, the NAACP sought to integrate White children from suburban communities with the Black children in Detroit. In part, because of dismay over the slowness of desegregation, other African Americans took another direction. Some community activists asked for reforms within the schools and the neighborhoods where low income Black families lived. In places such as Dayton, Ohio, reporters sometimes called these activists "Black separatists".

Interestingly, the federal government aided both groups. NAACP lawyers found the federal courts to be amenable to the changes they requested. The second group, called Black separatists, found the Model Cities program a source of millions of dollars for activities they wanted to begin. While these two efforts appear distinct, they represent intrusions by the federal government into local school affairs. NAACP lawyers wanted the federal courts to change the local school attendance policies they saw as unfair. On the other hand, Presidents Johnson and Nixon thought the Model Cities programs would help residents direct the federal programs. Consequently, researchers could use the cases of court-ordered desegregation and the Model Cities program to ask whether the federal government can engineer racial harmony. The Model Cities program raises another important question. This is whether urban renewal and school improvement can be accomplished while maintaining segregated conditions.

The National Model Cities Program

During the 1960s, the federal government intervened in a wide range of local community affairs. According to James Sundquist (1969), foremost among these efforts was the *Economic Opportunity Act of 1964*. Designed for urban and rural areas, this Act called for locally initiated comprehensive community action programs to focus a variety of resources on the roots of poverty. The hope was that, in each community, community action agencies would bring together separate efforts sponsored by the federal, state, and local governments to create a unified approach.

Unfortunately, the job was too large for the community action agencies. Sundquist says that there are many reasons why community action agencies failed. One reason is that those agencies never occupied seats of authority in their local communities. For example, southern communities saw the community action agencies as extensions of the civil rights movement that the White leadership distrusted. Another reason is the community action agencies grew quickly and created projects without careful planning. Sundquist believes the federal government encouraged the chaotic growth of community action agencies. He says that the Office of Economic Opportunity approved "individual projects that would not be inconsistent with the comprehensive plans when and as they were developed" (1969, p. 39). Consequently, individual communities did not study their problems but submitted applications indiscriminately. In response, the "OEO . . . began to set its own priorities in 'national emphasis programs'" (Sundquist, 1969, p. 42). Among these were Operation Head Start, legal services, comprehensive health services, foster grandparents, and Upward Bound. The result was that community action agencies could no longer devise plans to fit the local conditions. Despite efforts in 1966 to reinforce the authority of the community action agencies, the results were disappointing. In 1967, Sundquist visited several community action agencies around the country. He found that they were unable to carry out their proposed functions of community-wide planning, mobilization, and coordination.

Less than three years after forming community action agencies, President Johnson announced the creation of the Model Cities program to give special grants to cities that developed comprehensive plans that enlisted federal, state, local, and private resources to transform blighted areas into

useful ones. In January 1966, President Johnson sent the proposal for Model Cities to the U.S. Congress saying that it would "concentrate . . . available resources — in planning, in housing construction, in job training, in health facilities, in recreation, in welfare programs, in education-to improve the conditions of life in urban areas" (Sundquist, 1969, p. 81). The Model Cities program included two important changes from the community action agencies. First, Model Cities required that comprehensive and coordinated planning take place before any action began. As a result, cities applied for planning grants to submit proposals. If the U.S. Department of Housing and Urban Development accepted a proposal, it gave the winning city another year to perfect five-year action plans. Second, in order to receive a Model Cities grant, proposals had to show evidence of citizen participation in the planning and execution of the program.

In November 1966, despite waning support for the War on Poverty, the U.S. Congress approved most of the Model Cities program that the President had submitted. Congress reduced the funding, dropped a provision calling for racial integration of housing, prohibited HUD from requiring school busing as a precondition of assistance, and eliminated the requirement for each city to have a federal coordinator (Sundquist, 1969,p. 82).

Dayton Model Cities Demonstration Project

When the U.S. Department of Housing and Urban Development set a deadline of May 1, 1967 for initial proposals, Dayton, Ohio was ready to apply. Dayton's city manager had recently hired an administrative assistant to coordinate all federal programs. The city had just finished a five-year study funded by the U.S. Department of Housing and Urban Development that fit the Model Cities program. This study recommended improvement of the city's economic base, aggressive enforcement of building codes and housing rehabilitation, and extension of self-help programs to urban dwellers. In May 1966, Dayton's City Commission assigned an agency, named the Special Committee On Urban Renewal (SCOUR) to prepare a draft application. The agency hired a university professor as a consultant who picked West Dayton as the focus of the Model Cities application. West Dayton contained 30% of Dayton's substandard housing. The area had a population of 42,000 residents, 92% of whom were Black, and 32% of whom had annual incomes of less than $3000 (Staff Report, 1969).

On September 1, 1966, some residents of West Dayton rioted briefly but dramatically. The television and newspaper accounts confirmed the view that West Dayton should receive the attention of Model Cities. When SCOUR released the preliminary draft in December 1966, a group of African Americans complained that the people who lived in the area had not helped prepare it. They claimed the program shortchanged the residents. (Staff Report, 1969). In January 1967, when HUD distributed guidelines for the program, SCOUR revised the draft application to include the concerns voiced by West Dayton residents.

Submitted on April 12, 1967, SCOUR's Model City application asserted that Dayton had the problems found in any large city, but that they were less pronounced and therefore solvable. The application said that neighborhood associations created a system of indigenous leadership. The application added that the city had a new city manager, a new police chief, and a new superintendent of public schools who would initiate new plans (Special Committee on Urban Renewal, 1967). Pointing to the 1966 riot to prove the needs of West Dayton, SCOUR's plan was to set up programs to assure freedom of choice in housing, job opportunity, and job training. It offered two innovative suggestions: a Planning Council composed of elected residents and a foundation to raise private money to add to the programs (Special Committee On Urban Renewal, 1967).

While SCOUR's application was under consideration in Washington, two disturbances broke out in the designated program area. In October 1967, the city hired an interim Model Cities project coordinator, opened offices in West Dayton, and initiated a housing inspection program in West Dayton. The project coordinator appointed an Ad Hoc Advisory Committee to structure elections of residents for the Planning Council. He organized the Model Cities Policy Committee consisting of representatives from local public agencies, such as the City Commission, the Board of Education, and the County Board of Commissioners. According to the Project Coordinator's ideas, the policy committee was going to supervise the actions of the Planning Council. HUD approved this arrangement. On November 16, 1967, Dayton was among seventy-five cities to receive a federal planning grant.

In January 1968, the residents argued against the planned structure complaining that the professionals on the policy committee could overrule the decisions made by the Planning Council. This dispute arose again in the middle of February; the city manager applied for federal money to fund a Concentrated Employment Program without seeking the agreement of the Planning Council. After a long meeting, the city commission abolished the policy committee. This gave the residents on the Planning Council the power to make the policy decisions for the Model Cities program (Staff Report, 1969).

The formation of the Planning Council generated widespread enthusiasm among residents in the project target area. Seventy-one candidates ran for 27 seats. On election day, March 14, 1968, fully 24 percent of the eligible voters came to vote. No other Model Cities program in the nation had a higher turn out of eligible voters than cast ballots in Dayton (Staff Report, 1969). Once elected, the Planning Council seemed to turn to young or militant Black people for leadership. The result was that the residents in the community who had distinguished records of service accused the Planning Council of being aloof and unresponsive. On April 24, 1968, angry members of other community groups complained that the Model Cities program was violating their trust, making decisions in closed sessions, and neglecting their own constituency. The residents who complained were also African Americans (Goodman, 1968a). These people collected 246

signatures on petitions asking that their neighborhood associations no longer be considered part of Model Cities. They withdrew their petitions when the Planning Council promised to meet with them to find ways to settle the difficulties (Dansker, 1968).

In June 1968, Battelle Memorial Institute released an evaluation of Dayton's Model City program. It repeated the charge that the Planning Council failed to involve the residents in decisions. The report said that a few people made the major decisions about programs. Furthermore, the Battelle report said the Planning Council had a poor public information program that caused area residents to form unrealistic expectations. Battelle's report laid the blame on the Model Cities Planning Council; it said the members had developed internal solidarity fighting for a strong role. Unfortunately, those same members tended to ignore important programmatic considerations, and they had weak ties to the community (Goodman, 1968b).

The power the Planning Council held made the Dayton Model Cities Demonstration Project unique. No other program approved by HUD allowed target area citizens to have equal authority with the city administration. To some extent, federal officials saw this as a risk. The director of Model Cities Administration in New York said that "it is the city's responsibility to delineate the extent of citizen responsibility". He saw citizen participation as dangerous when the group decided to act on its own. While he praised Dayton's coalition between citizens and city hall, he noted that his confidence was "based on the City Manager's ability to stay on top of the program" (Goldwyn, 1968).

Evaluators commissioned by HUD to study similar programs in eleven cities revealed the unique nature of Dayton's Model Cities Demonstration Project. Released in 1970, the report by Marshall Kaplan, Gans, and Kahn, Inc. noted that Dayton, Ohio was the only program where the residents dominated the planning responsibilities. The report said that in Dayton's case, the existence of a cohesive resident base enabled them to exert dominance. However, it added that Dayton's city manager was continually involved in the Model Cities program offering visible public support. Unfortunately, since residents inexperienced with government regulations dominated Dayton's program, the proposal ignored many of HUD's guidelines (Staff Report, 1970).

Model Cities and the Board of Education

Resident domination of Dayton's Model Cities education component led to conflicts with the Board of Education. In general, the School Board supported Model Cities. For example, on June 27, 1968, the Board announced the creation of an Integration Advisory Council to report directly to the Board. The members of the Advisory Council came from all sections of the city including the West Dayton. In addition, at the same June 1968 meeting, the Board appointed 31 building administrators, 16 of whom were Black (Lashley, 1968). However, thirty White supporters of the Model Cities Planning Council who attended the School Board meeting in June 1968 did not see these changes as improvements. They shouted, "Black control of Black schools." They claimed they favored integration, but since there were Black schools, they thought Blacks should control them. An African American employee of the juvenile detention center objected saying that "Black control of Black schools means White control of White schools" (Plan Rebuked, 1968).

At first, the Model Cities members and the school officials tried to appease each other. In July 1968, the newly appointed Dayton school superintendent paid his first visit to a meeting of the Model Cities Planning Council. He praised the program as "a unique opportunity for achievement in the inner city" (Dansker, 1968). The education consultant to Model Cities tried to help the public schools. In December 1968, the School Board asked the voters to approve a school tax levy. The Model Cities consultant suggested using some Model Cities program money to help the schools in the entire city (Model Cities Levy Linked, 1968).

At the November 1968 meeting, Dayton's Board of Education declared its desire to actively participate in the Model Cities program. Although this was only tentative approval, it was essential in order for Model Cities to receive federal support. Unfortunately, it was not clear who would control the schools in the Model Cities area. In 1968, the Board of Education approved the formation of community school councils. In each school building, the council included six parents elected from the area, the principal, the community school director, representatives from the teachers' organizations, and, in the high schools, a member of the student council. The purpose of these community school councils was to encourage citizen participation in school affairs (Projects Listed, 1968). On the other hand, the Model Cities people expected these councils do more than encourage citizen participation. They wanted these school councils to have final authority over whatever happened in those schools. The 1969 Comprehensive Model Cities Plan said that the community school councils had to have authority if the schools were to serve the children in the neighborhood.

The 1969 application made a significant change over the initial application submitted in 1967 by SCOUR. The premise of the SCOUR's 1967 application was that there was something wrong with the homes and the neighborhoods in which the children lived. Thus, they proposed that compensatory education services should extend from preschool through upper secondary level. These services were to make up for non-supportive homes, deprived environments, and prevailing disinterest in school success. In contrast, the 1969 Model Cities comprehensive plan said the basic cause of the problems found in the inner West area was discrimination expressed in four ways. First, the residents were excluded from policy making or administrative decisions. Second, the services delivered to the area were inadequate. Third, individuals were prevented from using supposedly available services. Fourth, the residents had few choices in employment or housing. To prove the pervasiveness of discrimination,

they said "the Dayton Board of Education divides the money within its budget into equal portions for school districts throughout the city. This appears to be fair. . . . Except, the children in Model Cities Neighborhood schools have a wide variety of special needs and problems. . . . An equal portion is not enough to enable these children to achieve at the same level as students from other homes" (City of Dayton, 1969). First, the 1969 plan asserted that the seven members of the Dayton Board of Education School Board did not represent individuals living in the Model Cities. The Planning Council did conclude that "community involvement and the exchange of ideas between the community and the School Board, which represents the larger White community, has been discouraged by the forbidding facts of organizational structure and operation" (City of Dayton, 1969). Second, evidence of inadequate services was found in the low achievement of students, the high number who drop out, and the few students going on to college. Further, the Planning Council said that many of these difficulties arose because the residents lacked access to the schools; the lack of communication and sharing of power by the School Board alienated parents and children who then did not identify with the goals of the schools.

In its application, the Planning Council exaggerated the failings of the School Board. Although federal courts decided that Dayton had operated a dual system of schools, at least one Black man had been a member of the Board from 1954. In 1969, none of the seven members of the School Board lived in the inner West section, but one member lived in the West side of Dayton. Further, the Model Cities Planning Council ignored the new superintendent's efforts to hire African American administrators and to introduce Black studies and ethnic sensitivity programs into the schools. The Planning Council may have ignored these improvements because it wanted to justify taking control of the schools in the Model Cities area. They wanted to control the finances; they also wanted the power to select staff, principals, and teachers for the schools.

The Planning Council moved to take this control. In April 1969, the chairperson of the Model Cities Planning Council said that the purpose of the elected councils should be to set policy for the schools. He added that the educational technicians would carry it out (Harris, 1969a). Consequently, the Planning Council set up programs to prepare residents to serve on the community school councils. In June 1969, the project director of the educational component reported success in teaching residents "to participate fully in the development of new educational programs for the entire community." The residents who took part in this program learned to make decisions about site selection of schools, design of schools, purchase of materials, and designing curriculum. According to the report, the participants viewed the program as one that was moving toward positive school reform (Thomas, 1969).

Although it generated intense emotions, the fight for Black control of Black schools did not alter the educational programs. It devolved into a narrow personnel dispute. The Planning Council wanted a young African American man, then an assistant principal in a Dayton school, to be the director. The Board was unwilling to name him, although they agreed to do so on June 10, 1969 (Harris, 1969b). In July 1969, the School Board reversed a decision the director made about job announcements for positions in the Model Cities education staff (Allbaugh, 1969). The Model Cities education director fought the Board saying that the School Board should not control the project. He said the City Demonstration Agency controlled Model Cities since the federal money went to this group; the City Commissioner and the Superintendent of Dayton schools disagreed. Although he lost that battle, the Education Director publicly accused the Superintendent and the Dayton School Board of trying to destroy Model Cities (Felton, 1969). After nearly eight months of rancor, the Board agreed that all proposals affecting schools in the target area would be agreeable to the Model Cities Planning Council (Worth 1969). Two months later, the Board fired the Education Director of Model Cities because he had interfered at a riot at Stivers High School. When the School Board ignored the protests of the Planning Council, the Planning Council sued in common pleas court. They complained that the Board of Education had violated the agreement to share decision making with the Planning Council. In November 1969, the judge ruled that the Board could not enter an agreement to share the power to select personnel; the School Board could not abdicate the responsibility to hire, retain, or dismiss staff. In January 1970, the Planning Council returned to court and contended that federal program guideline stipulated that the Board of Education and the Planning Council share power. The judge said that federal guidelines could not force people to enter illegal agreements (Ruling Backs School, 1970).

This personnel issue did not alter the programs offered in the area schools for two reasons. First, despite being fired by the Board of Education, the former director was hired by the Model Cities Planning Council as a consultant ("Thomas to Draw Pay," 1970). Furthermore, the compensatory educational programs continued in the Model Cities neighborhood despite the controversy.

In 1970, of all the aspects of Model Cities in inner West, the biggest share of the total $2,949,000 budget went into the education component. It used $555,000. Job development was second with a total of $512,000. The money for education was spent on several projects. For example, the community schools program kept five schools open from seven in the morning until ten at night. During this time, the buildings held adult education classes, set up recreational activities in the gyms, and allowed residents to offer personal services to other people in the neighborhood. This program served over 1,000 people. Since residents of the area taught in the programs, the community schools employed and trained people who might not have had jobs.

The education component tried to change the personnel in the schools through two programs. First, the administrative interns program sought to train people to become change agents in inner city schools. The interns took sensitivity training and they studied the perceptions of neighbor-

hood residents. Second, the education component of Model Cities retrained teachers. Teachers learned to develop innovative teaching techniques and team teaching. In the first year, these inservices focused on Black awareness.

Finally, there were several programs for the students. For example, programs of guidance and counseling prevented children in the upper elementary grades from developing negative attitudes. The education component invited prominent Black Americans to visit the schools to inspire the children to succeed. Some of these programs were from other agencies, such as Head Start that enrolled almost fifteen hundred children andf employed 164 people to develop perceptual, social, and verbal skills in the children (City of Dayton, 1970).

Many of these programs were successful. The students in the summer youth tutoring program gained from six months to two years reading ability because of sixty hours of instruction. Between 1969 and 1971 eighteen interns received master's degrees in administration with special emphasis on inner-city schools (Tyson, 1973). The administrative interns were constantly on the job. They set up student council courts to help the students handle the discipline problems themselves. The interns arranged for municipal court judges to visit the schools and officiate at mock trials to show how the criminal justice system worked. Through the student council courts, the children in the school took a share in building management, and they learned important lessons in civics. The interns made home-visits to try to help children who were having trouble, and they conducted inservices to help teachers realize the problems the children faced at home. Because of this work, school attendance rates improved and discipline problems declined. Further, Model Cities contracted a branch of the Kettering Foundation, IDEA, to teach teachers and administrators how to introduce individually guided instruction into the schools. (Revere, 1994).

These activities increased to the point that in 1974, the education component secured more funds in partnership with other agencies than any other aspect of Model Cities. These partnership monies created opportunities for middle-school children with reading problems to teach reading to primary school children. Other partnerships included a program that recruited students from nearby colleges to serve as teachers' aides. Furthermore, a local historically Black state university opened a branch campus in the designated project area (Martindale, 1974).

Model Cities and School Segregation

The Model Cities programs reinforced the racial segregation of the public schools in three ways. First, the basis of the compensatory programs was that the children in the inner West faced special problems. Therefore, they should be kept apart. One example is illustrative. In 1969, the U.S. Department of Health Education and Welfare pressured the School Board to racially desegregate the faculty. In May, the Model Cities Planning Council sent a letter to the School Board saying there had been a "concentrated effort on behalf of the coordinator to orientate and further sensitize teachers to the neighborhoods' educational problems. It is important the present teachers be allowed to stay in their positions if they so desire" ("Model Cities Council," 1969). Consequently, in the eyes of the Planning Council, the special training of the teachers outweighed the benefits of a desegregated faculty.

Second, the Model Cities program reinforced racial segregation in schools by trying to defeat the liberal members of the School Board who were working to racially desegregate the schools. Until 1972, Board members who called themselves liberal held most of the seven seats on the Board of Education. When the Board fired the Model Cities education director in 1969, a member of the Model Cities Planning Council joined a newly formed conservative *Serving Our Schools* party. Supported strongly by White people on the east side of Dayton, SOS members favored retaining neighborhood schools. As a result, they favored firing the superintendent who had integrated the faculty in the schools and was moving toward integrating the students (Allbaugh, 1973). The Planning Council tried to show the liberal Board that the ideas of the conservative School Board party were reasonable. In February 1970, the chairperson of the Model Cities education sub-committee announced the formation of an alliance for quality. This new group asked two representatives from each of Dayton's ten high schools to compile a report. Their aim was to show the School Board that the school's quality was more important than racial balance among its students. The chairperson's rationale was that if all schools were of high quality, "the Black child will have no difficulty being accepted in the White school and vice versa" (Allbaugh, 1970).

Most important, the Model Cities antagonism against the School Board seemed to tip a crucial election in favor of the conservative party "Serving Our Schools." In 1969, three conservative members of the SOS party won election to the school Board. Drawing unprecedented publicity to school affairs, they resisted the efforts of the liberal majority to voluntarily desegregate the schools. In November 1971, a fourth SOS won a seat on the Board. In December 1971, before the conservatives took control, the liberal Board members passed three resolutions. One was an admission of responsibility for causing segregation in the schools. Another asked the State Department of education to form a metropolitan school district to force suburban children to attend city schools. The last was to order the desegregation of Dayton's schools. When they took office in January 1972, the newly elected conservative SOS majority rescinded those resolutions. The NAACP sued in U.S. District Court three months later. As a result, the 1973 election was an important election. If the liberals could win a majority, they would end the extensive legal resistance to desegregation the conservative SOS party caused.

In 1973, liberals organized into a School Board party named Citizens for Better Schools. They had a chance to unseat the conservatives who had taken control of the School Board in 1972 because four of the seven seats were open for election. Liberals already controlled two of the seats that

were not open for election. CBS members collected money, selected candidates, and planned a campaign. While one member of the CBS party won a seat, the candidate for the crucial second seat lost by seven votes with a total of 18,171. The election results showed that African Americans in West Dayton had helped defeat her. Before the election, activists whom newspaper reporters called "Black separatists" said that integration was not a primary concern for young African Americans; they complained that desegregation would make Black children a minority in all buildings (Hanna, 1972). Perhaps because of these arguments, voters from the predominantly Black West Dayton did not support the liberals as the CBS leaders had expected. One CBS candidate in 1973 was Reverend U.A. Hughey, a former officer in the NAACP. Although he was the only African American running for the School Board, he polled only 6,618 votes from West Dayton. This was 5,500 more votes than the strongest candidate from SOS had from the same area. But Hughey's popularity among Black voters was not as high as it should have been if those voters held a concern for the liberal views on the School Board. In the same election, a liberal Black man, James McGee, who ran for reelection for mayor, received 8,690 votes from West Dayton. This means that more than two thousand voters from West Dayton supported the liberal mayor but refused to cast a vote for a liberal School Board candidate (Schumacher, 1973).

Finally, Model Cities encouraged racial segregation in a controversy about the relocation of a school. In Spring 1967, a fire partially destroyed Edison Elementary School located in the Model Cities target area. During Summer 1968, members of the Planning Council and the Education Director of Model Cities wanted to rebuild Edison School on its original site and improved. Their view was that if the school was an excellent one, White children would ask to come to Edison. Hughey wanted Edison School to be relocated closer to White neighborhoods. Hughey's view was the school would promote integration by its location. Hughey lost that debate; the School Board rebuilt Edison on its original site (Goodman, 1968c).

Conclusion

In 1971, President Richard Nixon announced that Dayton was one of the twenty cities to participate in an innovation called Planned Variations of the Model Cities Programs. This meant that Model Cities would expand to cover all parts of the city. The Model Cities Demonstration Project on the West side remained apart, however, and its Planning Council continued to control its affairs much more than citizens' groups in other areas could. Unfortunately, pressure built in the U.S. Congress to remove Model Cities programs. By February 1974, there were three bills in congress that sought to consolidate the Model Cities monies into block grants. In part, the antagonism developed because many parts of the country did not have these programs. A more difficult argument against Model Cities was that the programs wasted money. Since Dayton's project was among the most successful, other program directors asked the city to try to save the program. In response, the City of Dayton produced a forty-page progress report and accompanying slide presentation celebrating the success of the demonstration project on the West side. Unfortunately, the publicity did not influence enough congressional votes. On August 30 1975, all of Dayton's Model Cities projects ended.

Dayton's Model Cities demonstration project on the West side of Dayton left financial problems in its wake. The city was forced to pay back large sums of money to the federal government that the Model Cities demonstration project had misspent. As a result, the city administration refused to give any citizen's group the financial control that the Model Cities Planning Council enjoyed (Woodie, 1994). The effort to racially desegregate Dayton's public schools was more successful. In September 1976, Dayton began a the first program of cross-district busing for racial balance in Ohio. Newspapers such as the *New York Times* praised it as the most successful up to that time.

Most important, neither Model Cities nor the court ordered desegregation of public schools reduced racial segregation. The number of children in the Dayton schools has steadily declined and the percentage of the students in the Dayton schools who are African Americans has steadily increased. As in the 1960s, school segregation reflects housing segregation. In 1980, only 13.5 % of the households in Montgomery County, in which Dayton lies, live in integrated census tracts (Montgomery County Fair Housing Board, 1985). This is such a severe rate of segregation that in 1988 a researcher found the housing patterns in the Dayton Metropolitan area to be the third-most segregated among fifty-nine other cities. Only Cleveland and Chicago were worse (Scipio, 1988).

In 1978, national columnist William Raspberry tried to assess the value of Model Cities to Atlanta, Georgia. He noted that the population had declined. Buildings were demolished. The percentage of families on public assistance had increased. Students in the area schools did badly when compared to students in other parts of the city. Raspberry said that these statistics do not prove that the project was a failure. He said that the project had allowed people to move out of the area. While President Johnson had promised that Model Cities would transform the slum, Raspberry was content that Model Cities had helped people leave.

The same is true of the West side of Dayton. Housing is demolished. Jobs are rare. Population has declined. In 1994, population of the inner West area, formerly the target area of the Model Cities Demonstration project, was 11,420. This represents a decline of 73% in less than thirty years. When the Model Cities demonstration project began, 42,000 people lived in the target area. Model Cities did not transform this slum. Most residents abandoned it.

Nonetheless, many groups look back to the Model Cities experience and find important and valuable lessons. Administrators in the City of Dayton acknowledge that Model Cities was an important project that encouraged residents to decide what will happen in their neighborhoods. It led to the

priority Board system that determines what projects go on in the city. Teachers say they learned that school people can join with parents and community members to make improvements in schools. An active system of community education councils work within the Dayton Public Schools. Furthermore, the administrative intern program from Model Cities schools trained many African American women who occupy important positions in school systems and in regional government. Some religious leaders say they learned to work effectively to overturn the effects of White racism (Davis, 1990).

These may appear to be minor benefits for a program that consumed a great deal of money, time, and human energy. However, the people involved thought that the benefits were extensive. Most important, these benefits imply that the empowerment of African Americans will break down the effects of racism. Unfortunately, in Dayton, the arguments of resident control of Model Cities seemed to reinforce the power of a small elite more than it encouraged genuine democracy. Perhaps widespread popular participation would have come in time. Dayton's Model Cities Demonstration Project lasted seven years before national leadership abolished the program. This may have been too short a period for participation to spread. Consequently, it is difficult to draw firm conclusions. Racially segregated programs could reduce the effects of racism and enhance democracy. Dayton's Model Cities Demonstration Project did not.

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From Matron to Maven: A New Role and New Professional Identity for Deans of Women, 1892 to 1916

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Abstract

Presidents of mid-nineteenth century coeducational colleges hired dormitory matrons as chaperones or disciplinarians. This arrangement was replaced by a new type of woman administrator—dean of women. The deans were highly trained, ambitious women not content with such a limited role. The careers and strategies of four women who were instrumental in transforming the position of dean of women into a profession are examined. This small cadre of women, working in midwestern institutions, developed an expansive vision for their position: Marion Talbot, University of Chicago, 1892 to 1925; Mary Bidwell Breed, Indiana University, 1901 to 1906; Ada Louise Comstock, University of Minnesota, 1906 to 1912; and Lois Kimball Mathews, University of Wisconsin, 1911 to 1918.

The term "dean of women" often conjures up one of two enduring stereotypes, either that of a matronly, curmudgeonly chaperone or an innocuous mother figure (Phillips, 1919, p. 3). Yet neither of those two characterizations, despite their persistence in the popular imagination, is wholly accurate. During the Progressive Era, it became instead a position "in which intelligent, well-qualified, well-educated women could exercise administrative skills and professional leadership and exert a unifying influence on behalf of women" (Treichler, 1985, p. 24). These well-qualified, well-educated deans did help improve the material lot of women students, especially at midwestern state universities. But most importantly, the deans—at least a small cadre of leaders between the years 1892 and 1916—forged a new professional identity for themselves as the first senior women administrators on coeducational university campuses. Their effort to create a profession for women—its initial success and what is seen as the eventual reversal of fortune—reveals typical difficulties faced by professional women in the early twentieth century.

The position of dean of women also played an interesting historical role by being the first systemic, administrative response in higher education to cope with a new, and essentially unwelcome, population. There was one brief period when the College of William and Mary hired a "Master of the Indian School," to look after the few Native American students, but by 1721, the Indian School had faded away and it was not emulated at other Colonial colleges (Morpurgo, 1976, pp. 67-69). The position of dean of women, on the other hand, was replicated widely.

Early History of Deans of Women

The position of dean of women was born in the antebellum liberal arts colleges of the midwest; it came of age in midwestern universities in the early twentieth century. Oberlin College opened its doors to women in 1833, an era in which propriety required the close supervision of unmarried young women in proximity to young men. The president and faculty quickly recognized such "problems which demanded the presence and supervision of an older woman" (Holmes, 1939, p. 109). The first woman to serve in this position at Oberlin was Marianne Parker Dascom with the title "Lady Principal of the Female Department" (Kehr, 1938, p. 6). The 1835 description of the Female Department in the college catalog indicated both Oberlin's desire to appease trepidation regarding coeducation and the scope of Mrs. Dascom's duties:

> *Young ladies of good minds, unblemished morals, and respectable attainments are received into this department and placed under the supervision of a judicious lady, whose duty it is to correct their habits and mould the female character. They attend recitations with young gentlemen in all the departments. Their rooms are entirely separate from those of the other sex, and no calls or visits in the respective apartments are at all permitted (Oberlin, 1835, p. 24).*

Antioch College in Yellow Springs, Ohio was also coeducational from its opening in 1854. President Horace Mann acknowledged that "[t]he advantages of joint education are very great. The dangers are terrible." Mann insisted on a boarding house for the young women. He stated, "I should deprecate exceedingly turning them out in the streets for meals" (Holmes, 1939, p. 6-7). The boarding house required a female supervisor.

When members of the Board of Regents of the University of Michigan were contemplating coeducation for their institution in 1858, they solicited opinions from educational experts of the day including Mann and Charles Grandison Finney, president of Oberlin. Finney replied that the results at Oberlin were "satisfactory and admirable" and offered the Board the following advice for ensuring success: "You will need a *wise and pious matron* with such lady assistants as to keep up supervision. ... " (emphasis added, Holmes, 1939, p. 7). Despite the positive outcome reported by Finney, Michi-

gan remained single-sex for another twelve years until economic pressures by tax-payers forced the university to open its doors to women in 1870.

The experiences of Oberlin and Antioch illustrated two important themes in the earliest history of deans of women. First, the "Lady Principal" was hired as a direct response to prevailing concerns regarding coeducation. Second, her duties were limited to supervision of living arrangements and the moral guardianship of the women students. After the Civil War, coeducation became more prevalent and so did the number of residential colleges employing lady principals, matrons, or preceptresses who supervised the women's housing. Swarthmore College was typical and engaged a "judicious matron" in 1872. By 1880, this practice was more common than not in the liberal arts colleges of the midwest (McGrath, 1936).

The pattern of hiring deans of women at midwestern universities was different, however, and it did not begin until the 1890s. The primary reason why many universities failed to employ a "wise and pious matron" from the outset was because the young state universities had not made provision for on-campus housing for women or men due to lack of resources. The women students were expected to lodge with family members or in local rooming houses. Without a specific dormitory, house, or female college to supervise, university presidents felt little imperative to hire a female administrator. For example, Indiana University experimented briefly with the position when Sarah Parke Morrison, IU's first female graduate in 1869, was hired to be a social advisor to women students in 1873. Morrison resigned her position after only two years and it remained unfilled for the next quarter of a century (Rothenberger, 1942).

In the late 1880s and early 1890s circumstances changed, leading to the appointment of women administrators. At a few universities, women students, their parents, and sometimes community members as well, agitated for the university to offer some living arrangements for the women students. Without supervised housing, middle-class parents and families who lived long distances from the campuses expressed reluctance to send daughters to college (Gordon, 1990). If boarding houses, residence halls, or sorority houses were created, an administrator was needed.

There were other catalysts, however, beyond the need to monitor a dormitory. As the 1890s progressed, faculty members on several campuses, with or without special residence halls for women, grew increasingly concerned about the extra-curricular activities of students. At the same time, faculty reluctance to handle such matters was intensifying. The growing demand for research productivity placed new pressures on faculty and created an unwillingness on their part to spend vast amounts of time on administrative details or student supervision. Nor would a president interested in research results want a faculty so engaged (Veysey, 1969).

It was interesting that the administrative response to excesses in student behavior, which included class "rushes" and violence in athletics, was a dean of *women*, when it was generally acknowledged that it was male students who exhibited the most troubling behavior. Such reactions suggest that presidents were responding equally to a resurgence of anti-coeducation sentiment at the turn of the century and to the consequent uneasiness felt on many campuses (Rosenberg, 1988).

The battle for coeducation was long and acrimonious. It has been compared by historian Patricia Palmeri (1987) to the abolition debate in terms of the intensity of emotions on both sides of the issue and the numbers of white middle class men and women involved. The high degree of negative feelings toward women on campuses created an environment that ranged from inhospitable to openly hostile. Therefore, administrators at coeducational universities in the 1890s were obligated to worry about the "woman problem." One response was hiring a dean of women. A pioneer in this regard was William Rainey Harper of the University of Chicago. Harper's dream was to make Chicago a Western Yale and the generosity of John D. Rockefeller gave him the resources to lure prestigious eastern academics to the shores of Lake Michigan (Gordon, 1990).

Harper was determined to fashion a great university quickly by hiring proven administrators and established scholars. Harper was not an enthusiast for coeducation, but the charter of the university demanded it. In keeping with his desire to hire the most talented faculty that he could and the social expectation that college women needed supervision, Harper offered Alice Freeman Palmer, the President of Wellesley College, the position of professor of history and dean of women for the university.

Palmer was reluctant to turn down an opportunity to become a female professor in a coeducational institution, for there were precious few such offers in 1892. She agreed, however, upon two conditions. Because her Harvard professor husband, George Herbert Palmer, was unwilling to leave Cambridge, Alice Palmer said she would only work in Chicago for twelve weeks a year. She also demanded that Marion Talbot, also a professor at Wellesley, be appointed as her deputy. Because of Palmer's schedule, Talbot was, in effect, the dean of women at Chicago (Fitzpatrick, 1989).

From Matron to Maven

With Talbot's appointment in 1892, the position of dean of women began to change. By 1916, the year in which the National Association of Deans of Women (NADW) was founded, a small cadre of women from midwestern institutions had transformed the position into a profession. This article examines the careers of four such women and the strategies they employed. Each woman made a specific contribution to the evolution of the profession. In addition, each woman was, at times, representative of other deans serving in the same era. The four women are: Marion Talbot, University of Chicago, 1892 - 1925; Mary Bidwell Breed, Indiana University, 1901 - 1906; Ada Comstock, University of Minne-

sota, 1906 - 1912; and Lois Kimball Mathews, University of Wisconsin, 1911 - 1918. The process they went through to establish a profession is similar to that of myriad other professions that were established in the early twentieth century. Identified are four steps that were especially salient to the deans: laying an intellectual foundation; initiating collective activity; becoming an expert; and creating a professional literature and association.

Laying the Intellectual Foundation

Marion Talbot was a bright and ambitious young woman whose family was part of the Boston intelligentsia—Julia Ward Howe and Louisa May Alcott were in her social milieu. Her father, Israel Tisdale Talbot, was passionate about health reform and the first dean of Boston University's medical school. In 1881, along with her mother, Emily Talbot, Marion founded the Association of Collegiate Alumnae (ACA), the forerunner of the American Association of University Women (Fitzpatrick, 1989). It was the most important organization for college-educated women during the era, dedicated to assisting women graduates in finding employment and intellectual opportunities in adult life.

Talbot's concern for the post-college fate of educated women was transformed at Chicago. She became devoted to making sure that the women students enjoyed the full advantages of the university while on campus. She understood the anti-coeducation sentiment that prevailed, and she, like Breed, Comstock, and Mathews, wanted to change the university and make it a more hospitable environment for women. Talbot articulated a purpose for women's education that she believed would both lay the intellectual foundations for the work of deans and minimize resistance to coeducation. She subscribed to several strains of late nineteenth century thought regarding intelligence and sex role definition which were challenging conventional assumptions about the place of women in education and society. In terms of her efforts to professionalize deans, two of her beliefs were particularly relevant (Rosenberg, 1982).

First, she believed in a modernist notion about the inherent rationality of all human beings which implied that women were as capable of intellectual thought as men. As she stated unequivocally in her book, *The Education of Women*, "women have proved their ability to enter every realm of knowledge. They must have the right to do it. ... Unhampered by traditions of sex, women will naturally and without comment seek the intellectual goal which they think good and fit" (1910, p. 22). Yet, Talbot never completely let go of all the vestiges of Victorian notions of propriety and separate spheres, other than intellectual, so the second component of her belief was that women were unique from men and required an environment that was special or distinct. Her beliefs in the benefits of a separate women's community placed Talbot firmly within the tradition of late nineteenth century feminists who adopted what Estelle Freedman (1979) referred to as "separatism as a strategy." The women "preferred to retain membership in a separate female sphere, one which they did not believe to be inferior to men's sphere and one in which women could be free to create their own forms of personal, social, and political relationships" (Freedman, 1979, p. 514). Creating essentially a separate-but-equal social life for women, as historian Joyce Antler has noted, often reinforced the sexual status-quo by making the separate spheres seem immutable, and, perhaps, this actually limited the choices for women. Yet, the creation of a discrete "social structure ... was a positive response to the pervasive sexism on campus" (Antler, 1987, pp. 98-99). If any of the four deans engaged the merits of this debate, they left no written record. It was clear from their actions, however, that they followed the separatism strategy common to women prior to World War I and created a distinct women's community on campus.

Talbot was attacked by those opponents of coeducation who argued that women should be in separate classrooms as well. But Talbot firmly stated that mixed classrooms were the only way to insure equivalent educational opportunities and that the needed "special" environment was for the out-of-classroom lives of women. Thus, Talbot acted as an intellectual bridge between the older view that feminine uniqueness implied intellectual limitations—"true womanhood"—and the belief that women were as rational as men, but still distinct—"new womanhood" (Freedman, 1974; Rosenberg, 1982). By asserting that women were academically capable in any field and the need for unique circumstances applied only to the social realm, she secured for women a safe place within the university, maintained propriety, and yet kept all avenues of mental exploration open. Her view laid the foundation for the professional work of deans.

Initiating Collective Activity

Talbot took the next step in professionalization and communicated her beliefs with other deans of women. She published widely in various education journals, especially the *Journal of the ACA*, but most importantly she initiated the first collective activity of deans by organizing the first professional conference. She decided to invite several women from other midwestern colleges and universities for a two-day conference in November of 1903.

Eighteen women, including the young chemistry professor and dean of women at nearby Indiana University—Mary Bidwell Breed—arrived in Chicago in the autumn of 1903 (Minutes of the Conference, 1903; Potter, 1927, p. 212-216). All the deans represented institutions in the midwest (except the dean of the college of Barnard) so it was not surprising that the meeting's official title was the Conference of Deans of Women of the Middle West. Ten of the women were from private institutions while eight represented state universities. Twelve of the women held faculty appointments in addition to their work as deans.

Not surprisingly, the first substantive issue addressed was housing—the most pressing student need that deans faced. But they discussed a few other topics as well including the helpfulness of the League of Women and the YWCA,

"Ways of Influencing Young Women," the effectiveness of "at homes"[1] with the dean, and self-government versus direct government (Minutes of the Conference, 1903, p.9). The deans then voted to meet two years hence and passed a series of resolutions summing up the collective opinion of the group. Mary Bidwell Breed was then elected president of the 1905 meeting.

Some time in the two years intervening between the first and second meeting, a decision was made to limit the membership of the group to deans of women in state universities, except for founder Marion Talbot who represented a private institution. No record exists of who made the decision or why,[2] but when the deans met in Chicago in December of 1905, the gathering was convened as the *first* meeting of "The Conference of Deans and Advisors of Women in State Universities." With the exception of Lucy Sprague from the University of California, all participants were from midwestern institutions. The early leadership of the new profession was securely in the hands of women working in the midwestern, public sector (Breed Correspondence, 1901 - 1906).

One interesting development at the 1905 meeting, however, was that the deans went beyond deliberations of the basic needs of students. The first resolution passed was on ways of making a community of women on campus which they believed was "absolutely necessary" (Potter, 1927, p. 217). Deans of women were probably unique on their campuses in understanding the complexity involved in achieving what would now be termed "full access." Typically, male administrators believed that admission to the institution was all that women needed. Deans, however, recognized that while the immediate concerns of housing, adequate meals, rest, and good health were necessary, the higher needs of women such as intellectual parity, career aspirations, leadership opportunities, and a sense of community must also be addressed. In this vein, the deans also discussed levels of scholarship and the place of domestic science in the curriculum, and were in almost unanimous agreement that the classroom should not be segregated by gender (Minutes of the Conference, 1905).

The biennial conferences not only aided the individual women in the course of their daily jobs by recommending standards of practice, but they were also a mechanism for communication among one another. Most importantly, however, they helped shape an identity for the new profession. A conference illustrated that the number of practitioners was growing, that they had an articulated purpose and a field of expertise, and it placed deans of women within the tradition of all other university administrators of the era who were also forming professional organizations and developing professional identities.

Resistance to their presence and their work was a significant obstacle faced by deans on the state university campuses. Although Breed held a Ph.D. from Bryn Mawr and a record of scholarly accomplishment which included study in a prestigious German university laboratory, her problem of acceptance was illustrative. When she took up residence in Bloomington in the fall of 1901, she met with resentment from both students and faculty. President Swain, who recruited her, believed deans were desirable. He was impressed with both her Eastern "sense of decorum" and her manner which was "strict enough to enforce her code of gentle-womanly behavior" (Clark, 1970, p. 1: 320). The fact that he wanted a woman who combined scholarly accomplishment with gentle-womanly grace was again consistent with the prevailing notions of qualifications for the position. But several male faculty members expressed resistance to the idea of a dean of women—not because of her potential effect on students—but because they objected to having a woman with any administrative authority at any level on campus. By the time of Breed's appointment, only three other women had ever been *employed* by the university; the female contributors to the university had been professor's wives and town women (Rothenberger, 1942; Clark, 1970).

Breed also met resistance from students who believed a dean was an affront to their integrity or feared possible limitations on their newly found freedom (Rosenberg, 1988, p. 118). Gertrude Martin who later became a dean herself, recalled her undergraduate days at the University of Michigan when they learned of Marion Talbot at nearby University of Chicago. "We resented that Chicago Dean of Women as an unwarrantable criticism of the conduct of college women in general. We were very certain we needed no disciplining" (Martin, 1911, p. 66).

Evidence left by students including letters and diaries suggests that deans on many campuses were successful in reversing resentment and converting it to a respect that sometimes verged on reverence (Haddock, 1952; Antler, 1987; Fitzpatick, 1989; Eisenmann, 1991; Stephens, 1992). Breed's strategy to win over opponents was rather straightforward to a modern reader, but it was new at the time—she expanded her role beyond discipline, involved students in policies and program decisions, and advocated for women in ways that made tangible differences in their lives. For example, she secured membership in the ACA so that Indiana students were eligible for certain scholarships.

Such high regard should not obscure the fact that deans and female students were not always of one mind. There were components of a generation gap and elements of a disciplinarian/disciplined relationship. There were also class tensions at times between the largely private-school educated deans and state university students. The deans—Talbot, Breed, Comstock, and Mathews—each came from upper middle class backgrounds, most had powerful fathers, and all had been, before becoming a dean, associated with an elite private institution. One of Comstock's close friends and colleagues, Lucy Sprague of Berkeley who also came from a privileged background, was more vocal on this issue than other deans. At times, she expressed her uncomfortableness with the rough-hewn nature of the state university women students (Antler, 1987).

Students and deans shared many political objectives, especially in reform-oriented areas, but many women students were pro-suffrage and thought the deans maddeningly silent on this issue. Students agitated for more freedom in male-female socialization which also caused a split between the two generations of women. Deans thought students were too frivolous; students thought deans were old fashioned, perhaps sexually unfulfilled or even "deviant" (Gordon, 1990; Mathews, 1915). But overall, female students had very few adult female role models on coeducational campuses between 1900 and 1920 and even fewer advocates.

Becoming an Expert

The next phase of professionalization called for the development of expertise: deans became experts in women's education in coeducational settings. This phase, roughly from 1905-1912, was marked by a growing professional maturity among the deans. Deans regularly published in educational journals, made connections to other professional women in education (especially the ACA), and became more "scientific," using techniques and language associated with scientific research. In 1911, Dean Gertrude Martin of Cornell conducted and distributed the first statistical research project on the work of deans. This intellectual activity, Lucy Sprague said, saved the profession from the "bog of discipline and decorum" (Antler, 1987, pp. 111-112).

Ada Comstock began her administrative career as dean of women at the University of Minnesota in 1906. She is perhaps best known as the long-term president of Radcliffe College, from 1922 to 1943, who eventually secured full membership (at least in theory) for undergraduate women at Harvard. However, she was also instrumental in helping deans of women develop their field of expertise. When Comstock arrived in 1906, she was immediately able to employ the strategies suggested by her colleagues for coping with the most basic deaning issues such as housing, so she was free to devote energy to other matters. She collected data on students and illustrated a systematic, more "scientific" approach to the job. In journal articles and speeches, she helped articulate the specific expertise needed by deans, building upon the ideas of women's nature previously expressed by Talbot. She then used her expertise as the basis for the campus programs she initiated.

Comstock's initiatives were dedicated to addressing the higher needs of women such as a sense of community, leadership roles, employment, and intellectual opportunities. As far as students were concerned, this was the strategy with the most tangible results. One of Comstock's first acts was to fight the use of the word "coed" in the Minneapolis and campus publications and the ridicule that women faced in the guise of humor. Although she was only partially successful, fighting public mockery became a cause taken up by several of her peers.

Creating a sense of community for the young women was Comstock's highest priority. The Alice Shevlin Hall, which provided women students with a physical place on campus to rest, study, eat, and associate with one another to ease the loneliness and feelings of isolation, was central to her mission (Comstock, 1913, p. 157). In fact, she described Shevlin Hall as her most effective "tool" (Johnson, 1910, p. 194). Comstock recognized that universities were organizations created and run by men "and however kindly the individual members of the faculty may show themselves ... the close discipleship which the young men may enjoy ... [is] not so easily attainable to the young women." (Comstock, 1929, p. 413). In several respects, Shevlin Hall was not unlike contemporary women's centers found on many campuses today.

The mechanism Comstock used to develop leadership skills and responsibility in students was the Student Self-Government Association which was voted in by students in December of 1906 for the purpose of aiding in the care and conduct of Alice Shevlin Hall. Such associations originated in the women's colleges and Comstock herself had participated in self-government while attending Smith College. Comstock believed that student-developed and student-enforced policies achieved more positive outcomes (especially in terms of greater compliance) than those dictated by administrators. In the meantime, the process taught students about leadership, consensus, law and order, and good citizenship (Comstock, 1909, p. 4; Ladd, 1910, pp. 7-8).

A student's need to finance her education, find suitable employment, and develop career aspirations was as important to Comstock as building a dormitory. She wanted to "fit" women for a greater variety of gainful occupations (Johnson, 1910, p. 195). In 1909, it was estimated that the average student needed between $350 and $450 to attend the university (Johnson, 1910). Comstock conducted research and found that fifteen percent of women students were at least partially self-supporting (compared with sixty-four percent of the men). On average, the women earned $191 while their male classmates earned $306 per year on the job. The women worked in very female-oriented occupations including housekeeping, child care, office clerking, tutoring, and other secretarial work. Comstock believed that low salaries obligated women to work longer hours and she observed that the women often suffered from overwork and exhaustion. She also discovered that despite the hardship, the self-supporting women did as well academically as their non-working counterparts (Comstock, 1910).

Comstock took it upon herself to oversee the employment of women, making sure that it was safe and fairly paid. She once said that "this aspect of the work of my office is of very great interest to me. It brings me in contact with many girls whom I am especially glad to know" (Comstock, 1908, p. 4). She used Shevlin Hall as a clearing house for job listings, but often the choices were limited. To increase employment opportunities, Comstock spent the Christmas vacation of 1911-12 walking up and down the streets of the Twin Cities trying to convince department stores of the sagacity of hiring women. She found that they "were particularly impregnable to the suggestion" (Blanshard, 1974, p. 11).

Creating a Professional Literature and Professional Association

Successfully initiating programs such as those created by Comstock and insuring that women had full intellectual participation in the campus became the *raison d'être* of the young profession of dean of women. Some deans, however, believed that their work on behalf of students and their own sense of self-esteem would be enhanced and legitimated if the overall status of the position was elevated. Lois Mathews at the University of Wisconsin from 1911 to 1918, was of such a mind. She believed that deans of women should also be members of the faculty and have more of the attributes normally associated with a profession—including a professional literature and formal training for aspirants.

Mathews was a protégé of Frederick Jackson Turner and the first women to pass Harvard's Ph.D. examination in history—although her degree was from the Radcliffe graduate school, a bureaucratic anomaly created to award doctorates to women because Harvard would not. She was an assistant professor of history at Vassar and an associate professor at Wellesley College before moving to Wisconsin.

In her long and occasionally heated negotiations with Charles Van Hise, president of the university, she held out for the title of dean (rather than advisor as he suggested) and the rank of associate professor. She argued that an associate professorship carried more weight with students and faculty and contributed to the dignity of her office. She also noted that she might only spend a few years in administration and might choose to resume a full-time academic career, in which case she would need the rank of associate professor to secure her own future. When explaining why she did not relent, she said, "if I were to undertake so great and serious a task as the deanship of women in the University of Wisconsin, it seemed to me it would be my first duty to make it in stature what it is in opportunity; and at the same time to try to make it an example to other universities in that regard" (Van Hise Correspondence).

Mathews' scholarly potential and productivity prior to entering Wisconsin was considerable—she published articles and wrote a very important book in 1909, *The Expansion of New England*, that had its last printing in 1962; her career as an historian was quite disappointing after she was made dean. Although she continued to teach, she did not contribute much after 1912 to the field of history. Unfortunately, Mathews' experience was very typical. All four women in this study were trained as faculty members and all four found their scholarly progress impeded by the exigencies of administrative positions.

Mathews was very dedicated to her new profession and brought to it the same intellectual vigor that she had applied earlier to history. While dean, she had numerous public speaking engagements, published several articles, and spoke frequently at ACA and the biennial deans' conferences. She invited aspiring deans to visit her on the Madison campus to learn about the job. She organized a statewide conference for all women deans in Wisconsin, including those from small colleges and normal schools. In the summer of 1915 she taught a course in "College Administration for Women," which was the first of its kind taught in a public university and was offered concurrently with the first courses taught on the subject at Teachers College (*The Daily Cardinal*, 1915, 1916).

Her most lasting contribution, however, was her 1915 book, *The Dean of Women*, the first book ever written on the profession that eventually became known as student affairs. A second book on the subject was not written until 1926 (Merrill and Bragdon). Mathews held a particular vision for the profession. She wanted to be "more than a wise and pious matron." She believed deans should be scholars, experts on women's education, and general advocates for women who expanded the social, vocational, and intellectual opportunities available to them. This book represented the collective wisdom of Mathews and her like-minded peers on issues ranging from teaching to supervision in the dormitories to how to organize an office. With all the pieces in place by 1916, the position had the vestiges of a profession.

Reversal of Fortune

The new profession of dean of women opened up the possibility of administrative careers on coeducational campuses. Because of the direct relationship between the number of women students at an institution and the presence of women in the faculty or administration, women's colleges traditionally offered a few opportunities, but prospects at coeducational universities were scarce, especially before 1920 (Clifford, 1989). Coeducational institutions, therefore, held tremendous promise for women who sought professional careers in universities, but who lived in the midwest or other regions of the country where single-sex education was less common. Therefore, deans acted as the "entering wedge" in coeducational institutions (Rossiter, 1982, p. 2). As the first and often the only female administrators who either held a broad range of responsibilities or the sufficient rank needed in the institution to initiate policy proposals, "they had the most consistent effect in bringing more women into the professional community" (Clifford, 1989, p. 13). They also succeeded in making the position of dean *de rigueur*. Although women's needs were hardly an institutional priority, the vast majority of all types of coeducational institutions had a dean after 1920.

One cautionary note on the effect of the position of dean on professional women is in order, however. Like other women in nascent professions, the pioneering deans struggled and strategized to secure professional status, overcome resistance, secure acceptance, and gain recognition. Yet, attaining the position was somewhat of a two-edged sword, perhaps analogous to the experience of academic women who sought appointments within home economics. Like home economics, being a dean provided women with

opportunities for professional work, but it also contributed to the ghettoizing of women into administrative roles that became essentially student affairs positions and, consequently, undervalued by the academy. In addition, many of the early deans (those hired in the first years of this century) were women with credentials which should have earned them faculty posts. These highly trained "teaching deans" combined teaching and administration and held faculty rank, but their administrative duties inhibited scholarly advancement. One can only speculate on how many women reluctantly settled for a combined administrative/academic post because they were not offered a purely academic job.

It was this trend toward an exclusively administrative post, away from teaching and in the direction of student affairs, that can be labeled (albeit rather dramatically) as the reversal of fortune. Talbot, Breed, Comstock, and Mathews worked in large universities and simultaneously held faculty positions. However, deans of women were also hired in other types of institutions such as smaller colleges and normal schools. Deans in these environments (and in some universities) began to question the need for dual faculty appointments—they chose instead to emphasize the counseling, guidance, and regulatory nature of their work. A few women with this point of view were studying for a master's degree at Teachers College in the summer of 1916 when they formed the National Association for Deans of Women (NADW)—which eventually became the professional organization for all deans. However, the NADW placed very little emphasis on the importance of faculty rank to the position of dean.

Lois Mathews' vision of deans as scholars lost out to the newer vision of the profession which was shared by the newly created office of dean of men (Catton, 1956). As student affairs practioners, they suffered a lack of prestige within the academy. Therefore, in terms of the administrative influence of deans of women, the era examined, 1892 to 1916, represented a high point. Later decades saw it further reduced in stature when former deans of women, who had once reported directly to the president, subsequently became assistants who reported to male deans of students (Greenleaf, 1968). It is intriguing to speculate on whether the strategy that Mathews proposed—holding dual faculty/administrative appointments—might have helped the profession of dean of women maintain or even increase its prestige on campus. As a result of separating themselves from the faculty, deans were isolated from any important power base within the academy.

Is there a place in a modern coeducational university for a dean of women? It is currently the case that many of the functions historically performed by deans of women such as housing, career advising, discipline, and health care are executed by various student affairs professionals of both genders. But to assume that such functions were the *sine qua non* of the work of the pioneers such as Talbot, Breed, Comstock, and Mathews is to ignore the historical evidence. What drove the pioneering deans to create a new model for the role was a desire to address inequities in coeducational environments, attend to the intellectual development of women students, and move beyond providing basic needs and discipline.

There is still a need to help women combat the effects of sexism, achieve intellectual parity, and find a community on campus. If the work of a dean, in the tradition of the pioneers, is needed, perhaps it is being accomplished today by professionals such as the heads of women's studies programs or the directors of women's centers. So, while a person with the title of dean may not be needed, someone with her agenda most assuredly is.

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[1] "At homes" were small gatherings in the dean's office or home. The conversation, accompanied by tea and refreshments, was guided by the dean for the purpose of discussing policies or problems.

[2] Several archival and published sources were consulted to establish the fact that no written record of this decision seems to exist, including: the papers and published works of Mary Bidwell Breed (Indiana University) and Marion Talbot (University of Chicago); the archives of the National Association of Deans of Women (currently the National Association of Women in Education) including the minutes of the dean's conferences; other histories of specific deans of women, the position of dean, or the NADW. (See the bibliography for: Catton, B., 1956; Haddock, R., 1952; Holmes, L., 1939; Martin, G. S., 1911; Mathews, L. K., 1915; Merrill, R. A. and H. D. Bragdon, 1926; Phillips, K. S. M., 1919; Potter, M. R., 1927; and Rothenberger, K., 1942).

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Consolidation Comes to Ashland County, Ohio

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Abstract

This study looks at the education and community of one-room schools in rural Ohio in the early 20th century. It focuses on three individuals, all of whom were students in one-room schools and two of whom taught in them. It ends with the consolidation of the one-room schools in Ashland County. Consolidating small schools was much touted by educators at the time, but it raises questions today about what the rural community lost and what it gained.

The one-room schoolhouse served midwestern rural community life in the 19th and early 20th centuries (Fuller, 1982, p. 235). In many ways the school grew up as an extension of the community. Farmers sculpted the school as an arm of their beliefs and lifestyle. Additionally, in the one-room schoolhouse, the community together witnessed exhibitions such as recitations, orations, songs, readings, seasonal performances, and spell-downs. School picnics and eighth-grade graduations also took place in these community centers (Fuller, 1982, p. 212).

During this time period, however, consolidation--forming a school district out of several small schools--was beginning to reduce the number of one-room schoolhouses (Fuller, 1982, p. 1). In most areas local farmers opposed consolidation. Although advocated by educators who promised better and larger facilities, libraries, and a principal for each building (Fuller, 1982, p. 231), consolidation also meant loss of direct community control over education. It meant taking the children out of the immediate community, relinquishing their education and even their transportation to another, larger community which represented or was perceived to represent a different culture and possibly a different religion. It meant that their children would have to conform in dress and behavior to a different set of standards and might face forms of "corruption," such as smoking, not faced before (Fuller, 1982, pp. 235-236).

Educators touted consolidation as the cure for the problems that plagued the one-room schools: lack of money, poor quality of teaching, poor facilities, lack of textbooks, and insufficient time. Consolidation represented progress to these educators (Fuller, 1982, p. 2). For them, one of the most important reasons to consolidate, although unstated when trying to convince farmers to consolidate their schools, was to professionalize decision-making, thus taking control from the local community which, in the opinion of many educators, could not be trusted.

Was consolidation a loss or a gain to Ashland County? To explore this question, we will consider the experiences of individuals who were students or teachers in a one-room school. In this study we meet three individuals from Ashland and Medina Counties, Ohio. All three studied in one-room schools; two later taught in one-room schools. Two related their experiences directly, and one is remembered in college catalogues, in newspaper reports, and by family members.

Jenny May Kohler, who preferred to be called May, grew up in Mifflin Township in Richland County, Ohio. She was the daughter of farmers, Jacob and Alice Kohler, and the sister of Lyman, Mabel, and Mildred. The Kohler family lived close to the border of another Mifflin Township, in neighboring Ashland County, and because Ashland County's Hiller School was the closest school to the Kohlers, the children were allowed to cross the county line to attend school. They attended St. Michael's Lutheran Church in the village of Mifflin, also in Ashland County.

Hiller School was originally named Pleasant Valley, then Houghenbough's, and finally Hiller's, depending on who owned the farm adjacent to it. Other schools in Mifflin Township of Ashland County were Stony Point, renamed West Point when it was rebuilt and moved after a fire destroyed it; Mifflin Grammar School, a two-room building in the village of Mifflin; and Buckeye Hall. (Kopp & Sloan, 1944, pp. 46, 52, 89).

The adjoining Ashland County township, Milton Township, had schools which included Pifer's, Wharton's, Paradise Hill, Anderson's, Albert's, Nelson's, Burn's, and Roland's (where May eventually taught). Albert's School was built in 1826 and was rebuilt as a "beautiful" red brick building. Nelson's was also red brick, rebuilt in 1891. The Baptists Tunkers in the community used Burn's School as a church. In 1914 the School Board of Pifer's School was censured for hiring a female teacher. Apparently the boys, who often attended school until age 20, were notoriously hard to handle, even for male teachers (Kopp & Sloan, 1944, pp. 149, 161, 166, 189).

May's family struggled financially, as did many other farm families, but they managed to send her to the Ashland College Normal program in the village of Ashland, Ohio in the years 1906-07 and 1907-08. In the 1907-08 catalog May was listed as an undergraduate in the normal program and a participant in penmanship (Ashland College, 1906, p. 78; 1907, pp. 57, 60). The complete normal program lasted three years,

but May did not graduate from it. Apparently two years was enough, however, to obtain a teaching license. May is included in the April 4, 1908 list of teachers who passed the teacher-licensing exam ("Ideals," 1908; "Licensed," 1908).

Family members remember that May taught at both Hiller School, in Mifflin Township, and Roland School, in Milton Township, and that she stayed with at least two families other than her own (All family information came from B. Smalley, personal communication, July 21, 1994; J. Conn & F. Cook, personal communication, September 4, 1994). May had to give her earnings to her father who promised to save them for her, but when she got married, he did not have the money. He did pay back at least part of the sum in the ensuing years.

For seven years May dated Chester Conn, a resident and teacher in Mifflin village, whom she had met at her Mifflin church. While May taught at Roland School, she lived with George and Sue Ohl who owned the farm across from the school; Sue Ohl was Chester Conn's aunt. Across the street, John and Anna Ohl had purchased their farm from the Rolands and donated a parcel of land to build Roland School. Their son, Ray Ohl, now deceased, remembered having had May as a teacher (R. Ohl, personal communication, April, 1994). Another family May stayed with was that of Charlie and Florence Aby.

One township news column ("North Milton," 1909) reported that "Misses May Kohler and Florence Brubaker took dinner with Mrs. Jay Latter of Ashland." May and Chester both attended a five-day Teacher's Institute, held in Savannah, Ashland County, Ohio, in August 1908 for which they each received a certificate of attendance ("Teachers Institute," 1908). Chester and May were married in 1914 when May was 25. The couple moved to Akron, Ohio so that Chester could find work and make enough money to support a family. By the next year May had her first child. She did not seek a teaching job in Akron.

Details of May's life as a teacher are difficult to piece together. Ashland city schools have school board minutes for the time period, but few records exist for the one-room schools. When the rural one-room schools consolidated with Ashland schools in 1939, most of the one-room schools' records were destroyed. Although news about Ashland village schools appears in the newspaper regularly during the time period from 1908 to 1914, news about one-room schools in the surrounding townships rarely does. The schools played such an integral role within the rural community that, except for an occasional spelling bee, they were not considered newsworthy. Additionally, while the rural one-room schools were integral to their rural communities, they were outside the activity of the village of Ashland, where the paper was published.

Clarence Brubaker began attending Roland School in 1915. That year new reading texts replaced McGuffey's readers. During Clarence's time at Roland School, a male student was paid $1.00 a week to bring in coal and start the fire on cold mornings, while the teacher swept and cleaned the schoolroom. Clarence's first teacher was Rhea Urban, followed by Rhea Workman. The teacher taught about 17 students in 8 grades. Clarence spoke favorably about his time at Roland School, and mentioned that he was able to finish two grades in one year, second grade by Christmas of 1916 and third grade by the end of the 1916-17 school year. This individualized pace allowed him to pass the high school exam a year early and, then, to attend Ashland High School. He drove a horse and buggy until he was in his third year of high school when he had a car to drive (C. Brubaker, personal communication, April, 1994).

Dorothy Rice was both student and teacher in a one-room school. She attended school in Chatham in Medina County, Ohio, north of Ashland County. Eight grades shared the school, and the teacher, Sam Orr, read the Bible daily to his students. He also kept the fire going and the school clean. Dorothy has happy memories of school, particularly recess, when Orr played games, especially baseball, with the children. She began school at age 5, walking one and a half miles with her 10 year old sister. In the winter their father took them on a sled. Dorothy finished her schoolwork a year early and, then, after passing the eighth grade graduation exam, entered Lodi High School, also in Medina County. The exam, the Boxwell-Pattison Examination, tested the children in history (including civil government), physiology, grammar, reading, arithmetic, geography, writing (hand-writing), and orthography (grammar, punctuation, and spelling) (Fuller, 1982, p. 213). Dorothy stayed with a family in Lodi, working for her room and board.

In 1915 she graduated and attended a one-year normal program in nearby Medina, Ohio, taught by the Medina County superintendent, and then a two-year normal program at Kent State in Kent, Ohio. In 1918-1919 she taught grades 1-4 at the Poe School in Poe, Ohio, now Montville, in Medina County. Grades 5-7 were taught in the Grange Building. She then moved to Spencer, Ohio in Medina County, near Chatham, where she had grown up, and taught second grade (D.R. Fuller, personal communication, August 17, 1994).

Dorothy opened each day with the Pledge of Allegiance, followed by reading. Other subjects she taught were spelling, arithmetic, phonics, history, art, music, and penmanship. The children were brought to school on a "kid wagon" pulled by two horses. Everyone, including Dorothy, brought lunch, and they all shared a common water bucket. Dorothy and the children often played games outside after lunch. A female janitor built a fire in the stove in the morning and kept the schoolroom clean. Dorothy, however, washed her own boards. She remembers hosting spelling bees, which the parents attended, in the evening. The class members drew names to exchange Christmas gifts, and in the spring she took them outside for flower collection and identification (D.R. Fuller, personal communication, August 17, 1994).

In Ashland County, the reign of the rural one-room schools ended in 1939. Joining other school districts across the nation, the Ashland County school board proposed to

consolidate the rural one-room schools into two districts and to consolidate the nearby schools into Ashland city schools. The recommendation "brought violent protest from members of district boards" at an open meeting at the county courthouse. The community representatives expressed resentment over sending their children to another community and having their money leave their local area. Jay Roberts, Milton Township board president was in a quandry. Three of their one-room schoolhouses had been condemned by the state department of education and were to close at the end of the term. The Board's long-range options were to build their own elementary schools or to send township children to schools outside the township. Apparently a temporary option, which Roberts preferred, was to repair the decaying buildings, but the state only had promised that option for a year ("Delegations," 1939).

Despite Roberts' intentions, consolidation was the less expensive route to take. Two days later Roberts declared that he was "heartily in favor" of sending Milton Township children to Ashland city schools ("Roberts," 1939). A week and a half later, Milton Township school district was transferred to the Ashland city school district ("Transfer," 1939). A delegation from the Roland school attendance area in Milton Township petitioned to have their pupils join with a county district instead of the Ashland city district ("Delegations," 1939). They feared the city students would corrupt their children. As a result, the Roland school attendance area was divided. One side of Township Road #1706 went to a county district; the other side went to the city of Ashland (J. Mueser, personal communication, April, 1994).

Like other farmers across the Midwest, Ashland County rural residents resisted consolidation. With consolidation they lost part of the nature of their community. The schools had offered a cohesiveness that otherwise was lacking. Because of the large distance between farms, lack of easy transportation or telephones, and a lifestyle that required hard work day after day, little socializing was done on a daily basis. People visited in town on Saturdays while they purchased groceries and other necessities, and on Sundays when they attended church. Children attended the schools daily during the term, and parents maintained involvement with the schools by serving on school boards, attending spelling bees, and providing transportation for their children when necessary. Most of the schools were within walking distance, and most of the schools reflected the culture of the community in which they were located.

Teachers in those one-room township schools were also responsive to individual needs, allowing students to complete two years' curriculum in one, for example, as in the case of both Clarence and Dorothy. In many ways the school was like an extension of home. Teachers played with the children at recess; they lived or boarded in the community; they knew the children's parents, brothers, sisters, aunts, and uncles. Children at school were not strangers to the teacher, to each other, or to each other's families. Children, teachers, and parents shared, inside and outside the school, in the same community, a community whose cohesiveness the one-room school perpetuated.

Rural Ohioans were proud of their one-room schools. With consolidation, children traveled beyond their known worlds. Whatever the alleged educational and administrative gains of consolidation, parents were no longer as much a part of the school culture, nor was the school as much a part of the parents' culture. In the name of progress one-room schools were abandoned, and with them, a form of community life as it had been known and fostered in rural Ohio.

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The Children of the Dream: Postwar Planning for The First Camp of the Children's International Summer Villages Organization

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Abstract

Established in the Midwest in the late 1940's by Dr. Doris Allen of the University of Cincinnati, Children's International Summer Villages (CISV) is a worldwide youth organization dedicated to peace and better global understanding. This article focuses on its creation and the ideas behind CISV, plus it documents the organizational work undertaken to open the first international children's summer camp in suburban Cincinnati, Ohio in 1951. Although multiculturalism is a contemporary expression, it can be seen historically that CISV represents a precursor to our current efforts in multicultural education.

Established nearly half a century ago in the Midwest, Children's International Summer Villages (CISV) is an international youth organization dedicated to peace education and global understanding. With an annual budget in the U. S. alone approaching one million dollars, CISV has grown from a small midwestern association to a world-wide organization with international headquarters located currently in England,that has served over 100,000 people, mostly children, with its various international programs.[1]

Prompted by the fiftieth anniversary of World War II, recent regional historical scholarship has focused on the role of schools during that conflict, as evidenced by several articles in the 1995 issue (Volume 22) of the *Journal of the Midwest History of Education Society*. This article examines the role of American education in the immediate postwar period. Within that context, CISV represented a group of educators who felt that internationalism should be a part of education. Their efforts and idealism were mirrored domestically by a postwar movement known as intergroup, or intercultural education, which in the Midwest was made known through the work of progressive educator Hilda Taba, director of the Center for Intergroup Education at the University of Chicago from 1948-51. Intergroup education represents both a precursor to and an early form of current multicultural educational programs; likewise CISV can be seen as an early form of multiculturalism.

Founded in the 1940's, CISV was developed by Dr. Doris Twitchell Allen, then associate professor of psychology at theUniversity of Cincinnati and chief psychologist at nearby Longview State Hospital. Noting the negative postwar climate of international tension and distrust, she thought international summer camps for children (called villages) would teach children to live in peace with people of other nationalities, a lesson that would carry into their adult lives and provide a seed for developing better international relations.[2]

In retrospect, Allen's conceptual idea was idealistic and optimistic for its time and place. Internationally, the late Forties were dominated by an American foreign policy which stressed the containment of Communism. Deteriorating relations with the Soviet Union had resulted in the Truman Doctrine and the Marshall Plan. Tensions in Europe were heightened by the Berlin Blockade. By the time CISV had launched its first summer village in 1951, the U.S. was deeply involved in the Korean Conflict. Throughout this time period, the threat of nuclear war hovered. Against this backdrop Dr. Allen developed and presented her concept of CISV, perhaps encouraged by the fact that in the immediate postwar period many Americans had rejected isolationism. As noted by William Chafe in *The Unfinished Journey*, "Nearly 80 percent [of the American public] endorsed U.S. involvement in the United Nations" in late 1945 (Chafe, 1991, p. 31).

The city of Cincinnati, with just over one half million inhabitants in 1950, was known for its conservative social and political climate. From this perspective alone it might seem surprising that such an apparently liberal organization as CISV, dedicated as it was and is to world peace and understanding, would have originated there. That it did so must be credited to the vision and charisma of Dr. Allen and to a small group of internationally minded citizens. This paper focuses on the creation of CISV, its objectives, and its organizational efforts in establishing its first summer camp.

In his history of CISV, the late William P. Matthews, connected with the organization for nearly thirty-five years in various leadership positions, chronicles the birth of the CISV idea. According to Matthews, Dr. Allen conceived of the idea in 1946 as a reaction to a proposal by Alexander Meicklejohn, who recommended creating "a sort of international graduate school for Ph.D. level students of philosophy, history, political science, economics, physics and the social sciences"(Matthews, 1991, p. 22). The purpose of this school was to produce the nucleus of a leadership group which would be predisposed toward world peace. As a specialist in child growth and development, Allen thought that Meicklejohn had targeted the wrong age group. For Allen, effective peace education needed to begin at a younger, more impressionable age, specifically preadolescent children.

Later in the fall of 1946, Allen was prepared to spread her idea of an international youth organization dedicated to peace education. While attending the annual conference of the American Psychological Association, she promoted the idea before her professional colleagues. Shortly afterwards she repeated her efforts before a meeting of social scientists in Bar Harbor, Maine. Professional support was visible, including that of anthropologist Margaret Mead and sociologist Gordon Allport.

One year later Allen attended the 2nd General Conference of UNESCO in Mexico City. According to Matthews, Allen was disappointed by her reception. Hoping to receive financial support, as well as support for her idea, she received neither from this United Nations organization, even though she felt "that UNESCO was the proper home for the CISV idea"(Matthews, 1991, p. 24). Her disappointment was tempered when her seven-year-old son unexpectedly asked her one day if he would have to ever fight in a war similar to the one which had just concluded. His youthful concern provided the incentive for her to continue to promote the CISV idea and work for its realization. By May of 1947, her renewed efforts had been noticed in an article in the *New York Times* (Kaempffert, 1947, p. E 11).

Throughout 1948 and 1949, organizational work continued. Because Allen envisioned psychologists and social scientists studying the children at this first camp to see how the children would react to their many cultural differences, she developed the Twitchell Allen Three-dimensional Personality Test for assessing personality dynamics within a multicultural setting. During 1949, she visited Europe and surveyed various international youth programs, including The Pestalozzi Children's Village, the Junior Red Cross Headquarters, and the International Voluntary Work Camps, all located in Switzerland (History, CISV Papers, Box 1, File 1). While in Europe, she visited the UNESCO headquarters in Paris and once again requested financial support for both operating the first camp, as well as the psychological and social science research connected with it. The first request was denied, but the latter was granted $3,000. UNESCO's response was a turning point for the planning of the first CISV camp. Up to this point Allen had envisioned a European location as its site. With UNESCO's refusal to provide operating funds, Allen and her husband Erastus, a prominent attorney who now had become actively involved with her idea, made the key decision to locate the first CISV village in Cincinnati.

From this point forward, much of the planning for the first camp centered itself in Cincinnati. Erastus Allen drew up incorporation papers for CISV and by September of 1950 the organization had achieved tax deductible status, an important step for fund raising. By this time also, the decision had been made that for this first camp the host city would be responsible for financing the entire camp, as well as travel costs for the foreign delegations, most of whom would be from Europe. CISV founders thought war-torn Europe had not yet fully recovered economically, so it was unrealistic to expect those nations to be able to afford camp expenses. Allen and her growing supporters felt that local funding would be the most reliable means to finance the operations.[3]

Meanwhile a finance committee had already determined that a total of $40,000, a sizeable sum of money in 1950, would be needed to sponsor the first village. The committee decided that individual contributions would be the best way to raise money, rather than seeking state or federal government funds which might compromise CISV's neutral stance regarding political ideology during this Cold War era. There was some concern that federal funds, in particular, might lead to the State Department using the first CISV village for propagandistic purposes. Corporate sponsorship was relatively minor with a $1,000 gift from Coca Cola, plus complimentary soda for the month-long camp (Correspondence, CISV Papers, Box 2, File 1), and a $3,000 donation from WLW, a part of the Crosley communications business (Financial, CISV Papers, Box 7, File 13). Most of the needed $40,000 came from private donors with the largest single gift, $15,000, from Mary C. Johnston, a member of the Procter family with historical ties to Procter and Gamble, Cincinnati's most well-known company. The depth of Dr. Allen's commitment was measured by her own $5,000 contribution to this first camp (Financial, CISV Papers, Box 7, File 13). Concurrent with their fund-raising efforts, the fledgling CISV organization waged a public relations campaign with thirty-five press releases published in Cincinnati's three daily papers in 1951.

By early 1951, the year of the first summer village, CISV had organized national committees in England, France, Denmark, West Germany, Norway, and Sweden, charged with the responsibility of selecting child and adult delegates for the first camp.[4] Each nation was to send only six children, usually selected from a single city. For example, in West Germany, six children were chosen from the schools in Hamburg.

The selection process reveals much about the CISV philosophy and its objectives. Eleven year olds were chosen as campers, or child delegates as they were labeled, because they were mature enough to spend a month away from home and would also be able to communicate their experiences with their peers when they did return to their home countries. Yet this age group was still young enough that their cultural and racial prejudices had still not solidified. It was also felt children at this age were relatively stable physiologically and emotionally, plus adaptable to new experiences (CISV Handbook, 1967, p. 5). Working with children this young was a unique feature of CISV, which has distinguished it from nearly all other international youth exchanges. The inspiration for choosing this age-group came from Dr. Allen and was endorsed by Margaret Mead. The criteria for selecting the first CISV child delegates were also developed by Dr. Allen and included "the ability to learn quickly, an outgoing, friendly nature, acceptance by other children, good health, a stable emotional makeup, the ability to transmit the experience to others after camp, and a real desire to be friends with children from other countries." (Matthews, 1991, p. 30-31).

Although only one of the criteria alludes to academic excellence, the evidence from the later academic careers of the American child delegates suggests an academically talented group. Five of six of them were to attend college, including such places as Yale, Cornell, Harvard, and Michigan (Delegates, CISV Papers, Box 12, File 5).

In retrospect, and from a modern multicultural perspective, choosing children from primarily Northwestern European countries, three from Scandinavia alone, hardly seems multicultural. Racial differences were nearly non-existent; and religious, linguistic, and ethnic differences seem small when viewed from a contemporary global or even national perspective. Even the early leaders of CISV by the mid 1950's were cognizant of the need for a more diverse international participation in their organization. Yet to minimize the cultural differences within this first group of child delegates would overlook the then recent experiences of World War II. Such a critique would miss the sharp divisions which still existed between various European nationalities as a result of the war. In fact, Allen hoped that these differences could be reduced by CISV participation, when children of diverse backgrounds began to discover their likenesses.

A closer examination of the background of the selected children reveals personal wartime circumstances in their lives that could have been potentially very divisive at that first camp. For example, at least one each of the German and Austrian children had lost a father in the war. Likewise, one of the French children, who was Jewish, had lost several family members to the Holocaust (St. Edmund's Camp, CISV Papers, Box 13, File 1). All of the European children, except the Swedes, had at least some direct memories of the war, since they were age five at its close.[5] Thus, recent historical events heightened whatever cultural differences might have normally existed amongst these children.

Several countries felt the need to internally diversify their own child delegations. France and Austria, both overwhelmingly Catholic, purposely selected Jewish and Protestant children as well as Roman Catholic. Likewise, West Germany,Austria, and Great Britain consciously diversified along social class lines. For example, the West German delegation chose children whose fathers included two white collar clerks, one teacher, one postman, and a factory worker (St. Edmund's Camp, CISV Papers, Box 13, File 1). In the United States, planners specifically chose one African American child delegate as well as hired one Black camp counselor for the staff, because they felt it was important for the foreign delegations to witness U.S. racial diversity. This was done during the early years of the civil rights movement and when Cincinnati, itself, was still overtly segregated. In fact, evidence of such segregation is noted in the first entry of a diary kept by the director of this first summer village. Written during June of 1951, camp director Ted Wuerfel wrote, "On trip to Glendale [the suburban location of this camp] group was refused service at one place because of Claire (Negro). Went to Igler's instead" (Wuerfel, 1951, p.1). In other words, they were denied service at one ice cream shop and had to patronize another.

By spring of 1951, the children had been selected with their adult chaperones. As conceived by Dr. Allen, this first summer village would consist of four components including the childrens' camp itself, an adult institute, a research program, and a public relations campaign (Matthews, 1991, p. 31).

In many ways the camp was like any other summer camp. Activities planned involved sports (highlighted in this instance by recreational swimming and other non-competitive sports), arts and crafts, folk dancing, daily chores, and parliamentary meetings. The camp was unique in that the children came from nine different nations, delegations of six children each about to embark on a one month long experiment in international living. As part of the planned camp, each delegation was to entertain the whole group with a show of skits, songs, and dances demonstrating their national heritage. Sightseeing in Cincinnati would be limited so that the time these children could intermingle at the camp setting would be maximized.

The chaperones, or adult delegates, camped at a separate, but nearby site. Allen thought this would be best in that their lingering prejudices and war time memories would be kept somewhat at a distance from the children. In retrospect, her decision was wise. In a 1994 interview with Dr. Allen, she noted that the children on their own were able to surmount their cultural differences much more easily than the adults.

The research component was to be led by Dr. Allen herself, who worked with a team of eleven social scientists. There was also one resident psychologist at the camp.

The fourth and final component was publicity, which reflected the hopes of the founders of CISV that there would be future summer villages, based on this CISV model. Consequently, *Look* magazine, the *Voice of America*, and the U. S. State Department were all permitted to generate news items about CISV.

On June 3, 1951, the children arrived and the first CISV summer village was officially opened at a church camp in suburban Cincinnati. Dr. Allen's idea had become a reality. All the pieces were in place for her to test the effectiveness of her experiment in peace education and global understanding.

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1. These figures are taken from the 1993 Annual Report of the Children's International Summer Villages, Inc. (United States Association).

2. Technically, CISV offically labeled their summer camps as villages. In this paper, both terms are used interchangeably.

3. By early 1951, Allen had recruited the active support of Cincinnati council member, Potter Stewart, later to be Justice Stewart of the U. S. Supreme Court. Outside of Cincinnati, she had also enlisted the support of the late Senator Margaret Chase, who represented Allen's native state of Maine.

4. In addition to these seven European countries, there were also delegations from the United States and Mexico.

5. See Ingvild's Diary by Ingvild Schartum-Hansen for the war memories of a Norwegian girl delegate as she described the German invasion of her homeland.

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Introduction To Another Voice: Educational Life-Writing As Responsible Text

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Abstract

Good educational biography serves to humanize both historical actors and the past itself. It gives readers a sense of real people involved with real issues in a complex world. If done with sensitivity and skill, educational biograhy provides us with knowledge, insight and understanding, elements that are always in short supply (Beauchamp, 1980, p. 4).

Life-writing, a broad category of writings which includes both biography and autobiography, is an immensely popular genre in contemporary North America. A survey by the Library of Congress revealed that during the first six months of 1990, more people read biographies than any other kind of book. Some view these biographies as an escape mechanism from the tremendous pressures of contemporary life (Beauchamp, 1980, p. 1). Others feel that biographical writings can fill a void in their readers' lives--lives void of intrigue, adventure, and excitement.

Historically, the reading of novels has been that outlet for many of its readers. According to James Veninga, "Biography has taken the place the novel used to fill. Nineteenth century novels. . .provided readers with large slices of life in which questions of character, motivation, morality, social pressure, and internal conflict could be explored in great depth." He continues by saying, "Most modern novels--all bare bones and spare parts--do not provide that kind of satisfaction. Modern biographies often do" (1983, p.37).

Educational life-writing focuses on "theoretical ideas about the nature of human life as lived to bear on educational experience as lived" (Connelly & Clandinin, 1990, p. 3). It unites the experiences of life and education. An educational biographer gathers materials such as letters, journal entries, diaries, photographs, tape-recordings, and interviews to construct the life-story of a living or deceased individual. Educational biography has taken on various forms. The two most notable are individual biography and group biography, the latter referred to as multibiography. Individual biography is a written story of one life; multibiography surveys the "lives of two or more persons published together for some definite purpose" (Winslow, 1978, p. 69). The individuals featured in biographies may be well-known educationists such as John Dewey or relatively unknown individuals connected to an elite institution such as Harvard University. Or the subjects, meaning the persons about whom a biography is constructed, may be non-elite individuals such as students, teachers, principals, schoolmasters and school mistresses, or even homeschoolers.

Educational life-writing, whatever its particular characteristics, is not popular, at least in the form of biographical essays published in scholarly journals. Only one American journal is devoted exclusively to life-writing, *Vitae Scholasticae* (*VS*), the organ for the International Society for Educational Biography. *VS* has a circulation of less than 100, an indication of the small measure of interest in its subject matter. *History of Education Quarterly* (*HEQ*), the organ for the History of Education Society (United States), is considered the undisputed leader in the field of educational history. *HEQ* published only five biographical articles and a small number of biographical reviews between 1977 and 1987 (Beauchamp, 1980). A content analysis of the first twelve volumes of the interdisciplinary journal *Biography*, revealed only eight educational biographical studies, a figure representing less than four percent of the total (Beauchamp, 1980). Many of these articles feature techniques and strategies for constructing biographies. Actual educational life-writings were the exception rather than the rule.

Given the apparent lack of interest in educational biography in the United States, American educational historians might be interested to learn that of the first thirty-three articles published in *Historical Studies in Education/Revue D'Historie De L'Education* (*HSE*), the organ of Canadian History of Education Association, thirty-nine percent, or thirteen articles, fall under the rubric of life-writing.

Furthermore, narrative inquiry is increasingly selected as the methodology of choice by researchers across many disciplines. The word "narrative" means a narration, or actual description of chronological events and experiences. Narrative researchers use personal narratives to construct biographies and other texts. For the most part, narrative implies a story of a person's life as told to someone else. If the term narrative appears in a book title, such as *A Narrative of the Life of Mrs. Margaret Douglas*, it implies a written account of the subject's life as constructed by the biographer. Narrative can also be the oral or written source material, or text, the researcher collects and uses to answer a research question. For example, in order to study the drop-out problem, a researcher collects personal narratives of girls

800

who have left high school prior to graduation. In other words, narrative can reflect (1) the historical life text as constructed by the biographer, and (2) the collected data, or text, the researcher uses to study some aspect of people's lives.

The study of narrative, called narratology, is a "study of the ways humans experience the world." According to Connelly and Clandinin, narratologists view education as "the construction and reconstruction of personal and social stories; teachers and learners are storytellers and characters in their own and other's stories" (1990 p. 3). Narratologists are found in many disciplines--psychology, philosophy, history, anthropology, and education; they write biographies, case studies, and life histories. Narrative inquiry, which also falls under the rubric of life-writing, stresses to restore "human agency and human relationships." It further focuses on the "motives, qualities of intellect, or creative sensibilities which the architects of education [have] brought to their task" (Finkelstein, 1990, p. 6).

Many researchers have viewed life-writing in one of two ways. Some regard it as "just" interesting stories with the possibility of some literary value. Yet, due to observer and narrator bias, these interesting data can yield no real generalizations or principles and thus have little value. A second viewpoint is that these data "might" have some scientific merit if analyzed in an "objective" manner. According to Gordon Allport, an early pioneer in biographical research, data can be objectified by following two procedures: by minimizing "observable bias" or by using the data to illuminate general concepts or principles. Allport felt that minimizing observer bias would promote validity and reliability and that data could then yield patterns resulting in generalizations and principles (Freeman & Krantz, 1980, p. 3).

Allport distinguished between using life-writings to analyze the person who had constructed them and using such documents to "discover generalizations about human personality" (Garraty, 1981, p. 284). In the 1930's he set out to standardize biographical techniques and eventually produced rules to evaluate life-writings. However, he soon realized that these rules were inappropriate and ineffective. He concluded that "biographies could not be reduced to formulas of any kind" (p. 284). This conclusion is the same as that reached by narratologists Connelly and Clandinin who believe that the criteria of validity, reliability, and generalizability are not appropriate for life-writing. Currently narrative researchers are developing their own research standards for each research project, which they justify as part of their methodology (Connelly & Clandinin, 1990).

This study seeks to dispel the myth that biography and history are two separate genres. It endeavors to release the "straight-jacket" definition of history, that is, an uncritical definition of history as a genre whose principles are unchanging and bound by tradition. With regard to this purpose, we raise the following questions: What is responsible text? Is educational life-writing a demonstration of responsible text? Or, is it theoretically deficient because it doesn't adhere to traditional social science criteria and principles? And, with regard to educational life-writing, do American and Canadian historians of education differ in their perceptions of "responsible text"?

In order to answer these questions, we will examine the leading American and Canadian history of education journals to determine: (1) the total number of articles published, (2) the percentage of educational life-writings, and (3) the apparent criteria for selecting publishable articles. One article from each journal that perhaps best represents what the journal has currently published in the life-writing category will be examined. The analysis will be augmented by comments of the editors and editorial board members. Our analysis might help us ascertain standards by which educational life-writing is judged as "responsible text".

History of Education Quarterly

> The History of Education Society is an international scholarly society. Its purposes are to encourage and facilitate research in the history of education; to encourage cooperation among specialists in history of education; and to promote an appreciation of the value of historical perspective in the making of educational policy (*History of Education Quarterly*, Winter, 1994).

History of Education Quarterly, (*HEQ*), established in 1949 by the History of Education Society (HES) has a circulation of approximately 1,600. Between 1985 and Winter 1994, *HEQ*, published 130 articles. Twenty articles, or 15%, are classified as educational life-writing.

Barbara Finkelstein says that the dearth of biographical articles in *HEQ* points to the fact that American historians have ignored relationships among people. Furthermore, "... historians have implicitly defined human motivation, action, achievement, and sensibility as utterly derivative--the product of economic desire, greed, political cunning, status anxiety, and/or philosophical and ideological commitments" (Finkelstein, 1990, p.6).

Finkelstein's assertions were supported by a recent past editor *of HEQ*, Professor William J. Reese, who stated that most of the leading educational historians in the United States are not writing biographies. Reese explained that he and many of his colleagues were trained to be social historians who are more interested in groups of people and large movements in education than in individual lives (Reese, 1990). All of *HEQ* life-writings can be grouped into two categories, principle-case studies and collective biographies. A principle-case study, the more popular construction, is an essay that features a general historical principle which is used to explain an important aspect of an educational movement or institution. The principle, repeated several times throughout the article and given special emphasis in the conclusion, is supported and illustrated by an historical case study, one element of which is a description of an educational leader. All details about the leader's personality and life story are

excluded except those related to the principle. Most leaders in the case studies are well known (e.g., Adam Smith, Horace Mann, Joseph Lancaster) and the institutions are usually elite (e.g., Barnard and Amherst colleges, the Carnegies corporation, University of Chicago).

"A Gamble of Youth: Robert M. Hutchins, the University of Chicago and the Politics of Presidential Selection," by Benjamin McArthur, is an excellent principle-case study (McArthur, 1990, pp. 161-168). McArthur begins by stating a principle that might be applied to a host of instructions of higher learning: "As bastions of tradition and instigators of change, universities periodically confront the tension embedded in those two antagonistic roles." He goes on to explain that the selection of a president is often the occasion when the conflict between these two roles is apparent. McArthur next defends his selection of the particular case study which he plans to explore in the article. While Robert Hutchins was president of the university, he became "a voice of educational reform and made his college the focus of national interest." In a few deft strokes augmented by photographs, Robert Hutchins is portrayed as a young, gifted university administrator with considerable potential to lead the University of Chicago to even greater prominence; but neither Hutchins' personality nor his educational philosophy is fully revealed. Instead, McArthur focuses on the power struggle among the members of the search committee. Their actions and personalities spring to life through the use of insightful analysis and provocative quotations.

A striking feature of the article is its strong argument that the study is worthy of the reader's attention. In addition to the reason cited above, McArthur states that the story of the selection of Hutchins is fascinating, it reveals the university "at an important juncture in its history," and it reveals how administrators at the University of Chicago would continue to make selections for presidents for the next sixty years. Without stating so explicitly, he also challenges historians of American higher education who have generally overlooked the political process of selecting a university president. He also cites from an impressive collection of personal and institutional documents in his reconstruction of the process of selecting Hutchins; and in so doing, he illuminates the tension between tradition and innovation which, he asserts, is central to the functioning of a major American university.

In an interview, Professor Jeffrey Mirel, editorial board member of *HEQ*, explained why McArthur's explicit and implicit arguments for the importance of his study are essential:

> Some authors seem to assume that if they are interested in a topic, then surely it is important. These authors need to convince me that the topic is important, but also that their topic connects to something larger, such as progressivism in New York or progressivism in general. The article should enlarge our understanding of a movement in education" (Mirel, 1991).

The life, personality, and educational philosophy of Robert Hutchins are not particularly significant to Mirel nor, perhaps, to the larger community of scholars he represents. What is more important is Hutchins' connection to major institutions of higher learning in the early twentieth century. According to Mirel, that connection must be stated explicitly and supported with solid evidence. Even if he is unconvinced by the historian's argument, Mirel says, he still accepts articles that present an interesting strong argument and are well researched (Mire, 1991).

Historical Studies in Education/Revue D'Historie De L'Education

HSE/RHE, the organ of Canadian History of Education Association, was founded at a conference hosted by the University of Calgary in 1988. It now has a circulation of 220 (around 10% are U.S. subscribers). It is bilingual so as to appeal to both English-speaking and Francophone scholars.

Between 1989 and 1994, *HSE/RHE* published 70 articles, 28 (or 40%) of which were life-writings. These articles can be grouped into three categories: methodological essays, individual life stories, and collective biographies. Collective biographies, the most prevalent type, usually explore some portion of the lives of a group of people, all of whom share a common identity or experience, e.g., lay schoolmasters of New France, teachers in late 19th century British Columbia, women students at Queens. Typically, the *HSE/RHE* life-writer traces the impact of factors such as gender, social class and ethnicity on the individuals' life-choices as well as the larger social and historical context in which they lived. The author concludes by making one or more generalizations about the group's choices and social conditions.

Rosemary Gagan's "More than 'A Lure to the Gilded Bower of Matrimony': The Education of Methodist Women Missionaries, 1881-1925" (1989), is an exceptionally well-written collective biography. Gagan explores the educational backgrounds of 300 Canadian women engaged by the Women's Missionary Society (WMS) of the Methodist Church of Canada between 1881 and 1925.

Like the biographers published in *HSE/RHE*, Gagan devotes some attention to defending the selection of her topic. WMS missionary work was a "unique career opportunity" for educated, single middle-class women, she explains, especially since most female wage-earners in that era were from the working class. She argues further that in view of the limited options available to women (domesticity or a secular professional career), missionary work was "an attractive, respectable, and exciting alternative." Most interestingly, she explains that missionary work had a hierarchical structure. The best qualified women went to the more visible foreign fields, particularly Japan, whereas the least accomplished labored with naive Americans and immigrants at home. These disparities help to explain why some missionaries had lengthy careers whereas others dropped out quickly.

Gagan is particularly adept at placing the women in their social and historical context. For example, she briefly but clearly describes a wide variety of schools attended by the missionaries: elementary schools, high schools, ladies' colleges, normal schools, universities, Bible institutes, medical schools, nurses' training schools, and business colleges. She devotes a good deal of attention to the institution established especially to train female religious workers, the National Methodist Training School in Toronto. In this way, she provides an excellent overview of the schools open to Canadian women of that era.

Gagan concludes by tracing the field failures and successes of the missionaries, such as their inability to learn Japanese or to cope with adversity. However, she reports that university graduates in Japan had longer careers than those with less schooling. "The pattern is repeated for West China and for home missions, suggesting that WMS university graduates were, in fact, more committed to the goal of a professional career as a single women than their less educated colleagues." Here is a fascinating portrait of a little studied female profession.

While an excellent essay, Gagan's collective biography should not serve as a template for articles likely to be accepted by *HSE/RHE* editors. Unlike *HEQ*, the Canadian journal has no one article that could serve as a representative sample. This is because the articles vary widely both in style and content. They do, however, share some common attributes.

First, many explore the experiences of non-elite individuals such as students and teachers. These non-elite voices, many being relatively powerless and unremembered, have been selectively omitted from much historical discourse. E.H. Carr remarks that selecting the facts of history is "like fish swimming about in a vast and sometimes inaccessible ocean, and what the historian catches will depend, partly on chance, but mainly on what part of the ocean he chooses to fish in and what tackle he chooses to use--these two factors being, of course, determined by the kind of fish he wants to catch" (1964, p. 23). Articles on elite and famous educators are the exception in *HSE/RHE*.

Second, a large number of published articles focus on issues of gender and power. Women are the subjects of most of the collective biographies, but men are not ignored; on the contrary, the life experiences of both genders are usually compared and contrasted. Winifred Millar, co-editor, was asked why women's history was a prominent feature of the journal. She explained that a grant from the Social Sciences and Humanities Research Council of Canada had resulted in the publication of papers presented at the 1988 meeting of the Canadian History of Education Association and that the theme for the conference was "Aspects of Class and Gender in Education." She further explained that gender is an area of scholarship that has been previously neglected but is now of much interest among Canadian historians (Millar, 1991).

According to Johanna Selles-Roney, the call to include "ethnicity, class, and gender has often left religion behind" (1991, p. 101). Not so with Canadian historians of education--they are exploring the frequently ignored topic of religious education. Four of the ten articles in the 1994 "Special Issue," referred to earlier in this paper, focussed on religious influences. "Educating for Temperance: The Woman's Christian Temperance Union [WCTU] and Ontario Children, 1880-1916" (Cook, 1993) is a typical example. This article gives a brief historiography of the WCTU and the program of temperance education in Protestant Sunday schools. It further elaborates the pedagogy rooted in evangelical convictions. Such articles place *HSE/RHE* on the cuting edge.

The Canadians' commitment to the development of young scholars contributes to its diversity. The editors of *HSE/RHE* encourage graduate students to submit articles for publication. The publication of such articles is one of the policies of this journal. Rebecca Coultor, a co-editor, explained that the policy was formulated in order to foster the development of the next generation of Canadian scholars. Editors sometimes request one or more revisions before the students' manuscripts are sent out for blind review. Coulter stated that graduate students often need such mentoring in order to become productive scholars (Coulter, 1991).

It is evident when examining the diversity in style and content of published articles that Canadians are committed to nurturing new perspectives and are encouraging diversified formats. There is no "one size fits all."

The Evidence of Responsible Text in Educational Life-Writing

Oral history has enjoyed a small but legitimate niche in Academe, but still it is often ignored by many academic historians or discounted along with "local" or "amateur" histories as being not sufficiently objective or analytic. The academic tradition, in history at least, has always set great store by objectivity. The subject may add color but corroborating evidence has always been demanded before any "serious" analysis can be made. Besides this, traditional academic authors have deliberately placed themselves between their subjects and the data in the interest of further ensuring the objectivity of the final product (Weiss, 1994, p. 193).

Educational life-writing is preferred and legitimated by a few, ignored and bastardized by many--bastardized in that life-writing is believed to debase or lower the character, quality, and value of historical scholarship. Traditional academic prowess, as Gillian Weiss states, lies in the researchers' ability to distance themselves from the subject. The desired outcome is bias-free data that yield a set of generalizations and principles that further explain a broad movement of education. Many academic historians view this process and the resulting product as "responsible text." They believe that before any life-writing essay or article for submission can be taken seriously, it must meet a predetermined standard, that

is, a set of rigid criteria designed to reject any amateur attempt at reconstructing history. In this case, the term "amateur" usually means an attempt at reporting personal experiences, whether factual or perceived, with little concern for norms or standardization.

History of Education Quarterly has the mindset described above. In keeping with the scholarly tradition, the History of Education Society as represented by its publication, *HEQ*, has defined and constructed history that incorporates human relationships as byproducts--derivatives from the larger society at work. Although the editors have not totally neglected the inclusion of non-elites, a multitude of voices (both elite and non-elite) are silenced. Advocates of this approach view life-writing only as a springboard toward understanding the larger society or movements in education. They selectively abandoned the principle of intentionality, that is, "that there is inseparable connectedness of the human being to the world" (Van Manen, 1993, p. 181). This abandonment of the nature and importance of lived experience supports objectivity. It also defines history as *genre* bound by a rigidity of style and format. It places a wedge between history and biography defining both as separate and somewhat adversarial genres.

As stated earlier in this study, the life-writing articles in *HEQ*, which amount to only 15%, fall into two distinct categories: principle-case studies and collective biographies. There appears to be little, if any, room for creative examinations of human subjectivities and connections. Why is this the case? Admittedly, the editors have confessed that they are trained social historians who center their interests on groups and large movements rather than on the personalities and relationships of individuals. Their professed standards for selection of articles is in keeping with their social training and within the boundaries of what they believe is acceptable to the historical community.

The resulting journal is bland and repetitive, lacking vitality, intimacy, and sensitivity. To place distance between oneself and one's subjects results in texts that are often stale and lifeless. Yet, in the editor's eyes, these texts reflect validity and reliability. Their perceived evidence of "responsible text" is rooted in the ideology of objectification.

Historical Studies in Education/Revue D'Historie De L'Education allows for fresh voices and new approaches. The questions that we would propose are; What can we, as American historians, learn from our Canadian neighbors? What is their conception of life-writing as responsible text?

It appears, from our content analysis, that *HSE/RHE* places much faith in non-elite voices. These voices are both authors of articles and the individuals they write about. The fact that the editors have designed a policy to mentor graduate students towards becoming the new Canadian scholars is evidence of their commitment to new voices. The fact that 40% of the total articles are life-writings about relatively unknown individuals, such as students and teachers of inauspicious institutions, shows that editors are affording power to those once historically silenced voices. Both non-elite and elite voices are not bound by traditional ideologies that prevents us from learning and experiencing the soft, sensitive surfaces of lived experience. Rather, lived experience is transformed in the breadth and depth of authentic meaning. Lived experiences can be likened to "motifs in the andante of a symphony," (Van Manen, 1934, p. 37). Therefore, biography and history are united as one genre, or one experiential, life symphony.

Second, *HSE/RHE* is not bound by traditional western academic traditions. This holds true with respect to methodology and perception of scholarly rigor. Both methodological positions, the objective and subjective, are celebrated and encouraged. One is not seen as more valid than the other. Both are needed--both are vital to the concept of "responsible text." The acceptance of data that do not seek to generate principles and generalization but seek to celebrate each individual life, is refreshing as well as pluralistic (Weiss, 1994).

In closing, "responsible text," and the evidence that supports it, are found in the Canadian journal. "The histories of women, working and middle classes, literacy, children and youth, families, among others contradict" the claim that the history of education thus far has failed to achieve the promise of the "new" or revisionist histories. "New approaches to gender, generation, family; ethnicity, race, class, culture, the state, politics, hierarchy, order, authority; ideology, discourse, rhetoric; institutions, teachers, learners.. offer unfulfilled or untapped possibilities" (Graff, 1991, p. 205-206).

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Have You Made Your Reservations Yet?

Overview of the 1995 MWERA Annual Meeting

by Sharon L. McNeely, Northeastern Illinois University
Program Chair

Chicago has been the home to MWERA for so long, it is difficult for most of our members to remember a time when we haven't been in Chicago, or at the Bismarck Hotel. When you walk into the Bismarck, you may remember the old, but you will find some changes the new management has made in the lobby, the rooms (those single beds are gone), and the services (easier check-in, voice mail, etc.). What you may not notice, unless you look closely at the program, is that we also underwent some remodeling.

Our remodeling started with moving the registration deadline ahead (September 25) to match the Bismarck's. While this may seem minor to our newer members, there are indications that some of our longer-term members may not notice changes (e.g. the 30+ people who tried to send their proposals in late, using the deadline that had been in place for prior years. Standard letter: ...I just assumed it was the same, I never checked...) So, if you haven't registered, do it now, and then finish reading this!

One of the other changes in our program is to integrate professional development into more of our annual meeting. My hope is to build our membership, share in more depth some of the important work of some of our members, and try to bring our finances into better shape. This year we designed the workshops to run in various patterns of pre-and during-conference, and to appeal to our membership, teachers, administrators, various educational graduate students, etc. I hope you will encourage educators you know to attend the workshops.

Unchanged is our integration of our student members' participation. You'll find their papers throughout. As in some recent years, students are not identified as such in the program. The idea is to integrate them, not segregate them!

I know "the crisis" in education is old these days, but I am hoping that the focus taken by Drs. David Berliner and Gerald Bracey will put a new twist on the old arguments. Dr. Berliner is joining us Wednesday night, October 11, for an open forum on the crisis (8 p.m.). Joining him on the debate will be Barbara McCombs and Gregory Marchant. As in previous years, this is open to the public. On Thursday morning Dr. Berliner will provide our opening keynote and focus the crisis back to some of the challenges we face in doing educational research. This will be followed by a day of at least 80 different presentations, including invited addresses by Barbara McCombs and Ken Kiewra.

The Friday luncheon promises to be jam-packed (no pun intended, I di[illegible]'t order jam for the lunch). Of course, there will be the usual brief gracious ceremonies and eats, and then Dr. Bracey will talk about the misrepresentation of test data in "hyping" the crisis in education, and some of the long-term ramifications to all of us. Dr. Bracey, like Dr. Berliner, will be available after his talk to meet for further discussion of his topic. Friday also includes an invited address by Barbara Shade, and another 60+ different presentations.

Friday is also the day of Exhibits. I feel a lot of personal investment here, since I have worked on developing the Exhibits over the past few years. I am so pleased that the various exhibitors are recognizing our membership as important authors, contributors, reviewers, consumers, etc. There are more exhibitors than ever before; and this year, some of the publishers have also agreed to sponsor coffee in the mornings, etc. Their donations to us are enormous, so please stop by and thank them for being here even if you don't buy something! If you are like some of our other members, you may want to bring an extra suitcase with you just for taking home the books you buy at the meeting!

Saturday morning has the Presidential address by Tom Andre (How will he do that after hosting the President's reception Friday night?), an invited discussion with Paul Pintrich, and another 20+ presentations. There is also a session for feedback about this conference, and the last of the Divisional meetings.

From the time Dr. Berliner opens the conference until we close sessions Saturday at noon, we have such a full schedule that we negotiated more time and more rooms with the hotel! There were hundreds of submissions for this conference. Every Division, with the exception of one, had to reject between 10 and 45% of their proposals. I hate writing rejection letters for good work. So, as much as possible, I carefully considered the papers Divisions wanted to accept and didn't have room for, and found most of them spots by combining presentations across Divisions, or allocating to other formats those papers which seemed like they could fit that way. The result of all of the Division co-chairs' decisions is a program of over 160 different presentations that really offers variety and depth. There are symposia that have standard educational research, and those that link with teachers, students, administrators. There are invited speakers who have a session alongside other sessions because we couldn't give them our undivided attention without severely cutting the presentations. There are papers, posters, roundtables and discussion groups. Keeping one session per Division per time slot was an impossible goal for some of the bigger Divisions. So, some participants will have to choose carefully among sessions.

I remember my first years as a graduate student attending MWERA. I couldn't wait for sessions to end so I could go shopping! Members returning to Chicago, and those just joining us might be thinking the same thing. Yes, there are stores open after the sessions end each night. I also want to remind you that you are coming to an urban downtown. Please be wise and stop at the registration desk to get a local map, directions to shopping, restaurants, etc. Please don't carry a lot of cash, and avoid purses, bulging wallets, and the like if you can help it. When you are in the hotel, use the safe deposit boxes, and make sure you chain lock and bolt your door. I don't mean to scare you, just ask that you be aware. I have lived here long enough now, I feel I should run a training course on "what to watch out for."

Yes, you should watch out! If you don't plan your time wisely, and look carefully at your program, you are probably going to miss some fantastic presentations. I wish we could audio and video tape a number of the sessions. Unfortunately, there weren't enough sales of tapes last year to offer that to members this year. So, arrange with colleagues that each of you attends a different session. If you bring 10 colleagues you should be able to cover everything in any one time slot!

As in previous years, we are counting on the goodwill of our membership to really help make the annual meeting a great meeting. We know that one of the key ways we build membership is through each member bringing a colleague or a student to the meeting. If you haven't already shared the information about the annual meeting with someone, now is the time to do so.

I have arranged for overhead projectors. I am still working on getting help for moving, set-up and storage of them. I am hoping you will help, or be patient with those who are helping. I also ask that everyone take a moment when they leave a session and remember that another session is starting in that room in a couple of minutes. Please help put chairs back, and clean up the room. If you are continuing a discussion, please move to the Blackhawk Room, and try not to disrupt the other sessions that are beginning.

I can't say enough good things about the fantastic work that the Division co-chairs, and all the other program associates have done and are doing for this meeting. I don't want to envision my job if any of them hadn't done theirs! I am hoping you will enjoy the conference!

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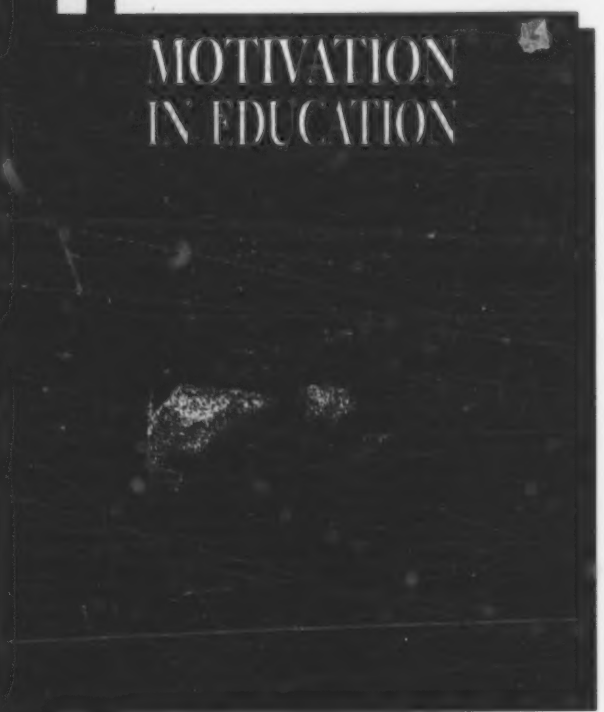

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On The Cover

The College of Education at The Ohio State University is widely acknowledged as a preeminent professional school of education, both in terms of the quality of its preparation programs for entry-level educators, education leaders and the education professoriate, and as an accomplished center for research and development initiatives. Hence, for decades it has received the highest rankings from its peers.

In 1974, Change Magazine reported college of education rankings, placing OSU's college in the top five, following only Stanford and Harvard, making this College the number one public college of education in the country. In the Forgan (1989) reputational study of colleges of education, OSU's College of Education ranked number one, tied with Michigan State University, in preparation programs for teachers and other practitioners, and in the top five for research efforts in education and services contributed to the profession and the community. In one of the most comprehensive rankings studies to date, conducted by West and Rhee (1993), and assessing institutions and departments on multiple variables, OSU's College of Education ranked third in the country on both productivity and program impact, and prestige. Further, across seven academic areas, it was in the top five in four of these and in the top 10 in two others.

Front Cover: Arps Hall, Sketched by Sandra Spangler, 1992

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Ayres G. D'Costa, *MWER* Editor
287 Arps Hall, 1945 N. High Street, The Ohio State University, Columbus, OH 43210

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Forging "Connections": A Frames Analysis of the Implementation of a Pilot Interdisciplinary Program
Nina G. Dorsch, Northern Illinois University
2

1995 Convention Perspectives and Photos!
10

Through Their Eyes: Teacher Self-Assessment
Ann M. Jones and Peter W. Airasian, Boston College
12

Invitation for Proposals for 1996 Annual Meeting
17

Reviews of the Book: The Bell Curve: Intelligence and Class Structure in America Life
Dennis W. Leitner, Southern Illinois University
25

An Annotated Bibliography of Reviews of The Bell Curve
Lyle J. White, Southern Illinois University
27

A statistical critique of Herrnstein & Murray's The Bell Curve
Thomas R. Knapp, The Ohio State University
32

Responses to The Bell Curve: A Conversation with John Goodlad
Mary R. Sudzina, The University of Dayton
33

Voices in Education
Marlene Schommer, Wichita State University
34

What is "Heritability" and What is it Not?
Lisabeth F. DiLalla and David L. DiLalla, Southern Illinois University
36

My Swing at the Bell!
By Dennis W. Leitner, Southern Illinois University
38

Letters to the Editor
Thomas R. Knapp, The Ohio State University
Clete Bulach, West Georgia College
41

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Forging "Connections": A Frames Analysis of the Implementation of a Pilot Interdisciplinary Program

Nina G. Dorsch, Northern Illinois University

Abstract

The current wave of education reform is characterized by initiatives which rely on the ability of teachers to collaborate as a collegial community. This qualitative case study examines the experience of one teaching team as they implemented "Connections," an inclusive, interdisciplinary pilot program. The making of Connections was a process of mutual adaptation, not only of the teachers' former individual practices with their new collective practice, but also of the larger school organization and the emerging Connections organization. Guided by Bolman and Deal's theory of frames analysis, this study considers how the Connections teachers created and sustained a collegial community.

The current wave of education reform challenges the traditional patterns of school organization. Initiatives such as inclusion and interdisciplinary curricula rely on the ability of implementing teachers to collaborate as a collegial community. Models for reform innovations propose creating opportunities for interaction among educators. While such arrangements foster increased teacher interaction, they are critiqued as most often generating only a surface collaboration that Hargreaves (1991) labels "contrived collegiality." Yet such collaborative structures are inherent in what Little (1990) views as one of two fundamental conditions necessary to true collegiality: opportunity. The other necessary condition for collegiality is interdependence.

Research points to the dynamic, unpredictable nature of the change process as most often incremental, fragmented, and context-bound (Odden, 1991; Fullan, 1993). In most schools and districts, many partially implemented innovations and pilot programs operate at any given time (Joyce, Wolf, & Calhoun, 1993). Moreover, within the local context of change, multiple and sometimes competing or conflicting organizational environments exist and so complicate the implementation process (Little & McLaughlin, 1993). How implementors resolve such competition and conflict influences the outcome of innovations.

The purpose of this study is to describe the experiences of one teaching team in a school in southern Ohio, Cedar City High School, as they implemented a program called "Connections" during the 1993-1994 school year.[1] Connections was an innovative pilot program designed to encompass the content areas of English, science and social studies. The Connections program derived its name from its interdisciplinary goal of designing instruction so that students would come to understand the interrelatedness, or connections, among the three subject areas. A voluntary program option, Connections was conceived as serving eighty students in a heterogeneous ninth grade cohort, including students identified as having learning disabilities. The four implementing teachers represented each of the three content areas and special education. With its dimensions of interdisciplinary study and inclusion, Connections represented the type of curricular innovation which Ohio (like many other states) encourages as part of its agenda for reform. Like many other schools and districts which take pride in the quality of the education they provide, Cedar City (for both political and practical reasons) undertook innovations cautiously—Connections would be implemented in the context of a school which retained its traditional structures and culture. The dynamics involved in the mutual adaptation of competing and/or conflicting organizational environments described by Little and McLaughlin (1993) could reasonably be expected to emerge during Connections' initial implementation.

In studying the Connections program throughout its initial implementation year, significant attention was given to the process of mutual adaptation that attended the Connections teachers' experiences in implementing a collaborative reform within an otherwise traditional high school. While the overarching research question concerned the extent to which the Connections teachers were able to create and sustain a teaching team that represented the collegial community implicit in the program, this study also considered two subsidiary questions:

1. How did the Connections teaching team at Cedar City High School organize to implement the Connections program?

2. How did the larger Cedar City school and district organizations influence the Connections program's implementation?

Guided by these questions, a case study of the Connections experience might well add to an understanding of the regularities of teaching and what may be involved in trying to change them.

Data Collection and Analysis

This study followed a qualitative case study research design (Merriam, 1988), employing data gathering and analysis techniques characteristic of qualitative research. Data sources include: (1) observations— of the teachers' planning and training sessions prior to the start of the school year, meetings of teachers with administrators, parent information meetings, and twice-weekly observations of both the teachers' common planning period and the three-period Connec-

[1] To respect confidentiality, "Cedar City" is a pseudonym. All administrators, teachers, and students names in this study also have been given pseudonyms.

tions block of classes throughout the year; (2) interviews— with teachers and administrators; and (3) documents— including internal communications, district community newsletters, and relevant local newspaper articles. Because the interviews and observations were conducted over an extended period of time (a full year), the teachers were quite candid and comprehensive in their responses and unguarded in their actions and interactions. Triangulation among these data sources as well as the reactions of the teachers and principal to working drafts also contributed to the trustworthiness of the data.

The extensive field notes, observer's comments, and interpretive memos within this data set suggested that Connections involved multiple relationships, or connections — between and among teachers, students, parents, administrators, and the surrounding organizational systems. Coding categories (e.g., perspectives held by subjects, activity codes, strategy codes, process codes [2]) which emerge during content analysis confirm the complexity of these connections. Any analysis of these connections would require a conceptual framework that accounted for this complexity. Bolman and Deal's (1991) four frames of organizational analysis — structural, human resources, political, and symbolic — offered such a perspective.

Bolman and Deal posit that each frame affords a perspective that might shed light on "a different slice of life" (p. 309) within the Connections experience. In presenting this study's findings, the structural, human resources, political, and symbolic dimensions of both the emerging Connections organization and the larger school and district organizations will each be considered in turn. However, Bolman and Deal point out, "For different times and different situations, one perspective may be more important than others" (p. 325). Therefore, Connections' context — its people and setting — would be an appropriate starting point for analysis.

Connections' Context

Cedar City and Its Schools

Located within commuting distance of three urban areas, Cedar City is a postcard prototype of small towns of the American heartland. Cedar City's location and Norman Rockwell-ian atmosphere have contributed to the population growth and economic expansion the community has experienced beginning in the 1960s. Cedar City Schools mirror this community growth. A sustained pattern of growth in student enrollment led to two building projects as well as to the Board of Education's decision to seek passage of an operating levy during the Connections year.

Cedar City Schools, and the high school that is the setting for this study, mirror not only the city's growth, but its character as well. Cedar City High School (CCHS) exhibits a decor common to most high schools. But distinctive touches are presented as well. A grouping of four chairs upholstered in a faded shade of maroon, one of the school colors, is arranged to create a lobby at the main entrance. Benches have been placed at intervals along the central corridor, and students often cluster there before school or between classes. It is an environment that is comfortable for the 750 overwhelmingly white, middle class students and their 44 teachers.

Cedar City students and teachers experienced several changes in administrative personnel in the three years prior to Connections' implementation. In 1990, Martin Young assumed the superintendency; the next year brought Mike Davis to Cedar City as the Assistant Superintendent for Curriculum and Instruction; and 1992 saw several changes in building leadership, including a new high school principal, George Cerny. Under this new leadership, the district initiated several changes. One of the changes was Connections.

Initial interest in developing Connections came about through a visit Davis and Cerny made to observe a similar program in the Columbus area. The local newspaper quoted Cerny's description of the event that would lead to Connection's adoption:

> We were so impressed that we sent up three of the schools' department heads who, afterwards, turned out to be equally as enthusiastic . . . At this point it's just a matter of presenting the benefits of the class to the board, selecting the teachers to teach the class, and discussing it with parents.[3]

Cerny's forecast was accurate. As the three department heads talked with their colleagues, several teachers became interested. Guided by their interested teachers' areas of certification and experience with ninth grade curriculum, the advice of department chairs, and his first year experience observing the teaching interaction of his staff, Cerny chose the Connections teaching team. They will be introduced next.

The Connections Teaching Team

The four Connections teachers were: Sheryl Hart, English; Bernie Lyons, Social Studies; Tim Schwartz, Learning Disabilities; and Dan Centers, Physical Science.

With 25 years in the district, Sheryl Hart was the veteran teacher of the group. She had taught Art as well as English, and had worked in all five buildings in the district.[4] Prior to coming to the high school three years before, Sheryl had been part of a close-knit group of teachers at the junior high. Family was a theme that surfaced often with Sheryl. Conversations with Sheryl often centered around her family, and homey touches — including a smiling picture of her three-year- old granddaughter — distinguished Sheryl's desk area. As part of the Connections teaching team, the importance of family to Sheryl would also be evident.

Bernie Lyons joined Connections with 15 years of teaching experience, nine of them at Cedar City High School. During the Connections Year, one edition of the monthly district newsletter featured Bernie in its regular staff profile column. The article began with this portrait:

> You know, he's one of those teachers that students say can be very demanding but they really like his class anyway. He's one that lives and breathes his subject — history.

[2] The development of decoding categories after data collection, as well as analysis in the field, conformed to Bogdan and Biklen's (1982) suggestions regarding qualitative data analysis.

[3] To respect confidentiality, the local newspaper source will not be given.

[4] The five buildings include three elementary schools for grades K-4, an intermediate (grades 5&6) and junior high (grades 7&8) housed in the same building, and the high school.

Bernie's love of history was a constant, as was his love of coaching. But the Connections year would also bring changes in his life. October brought two dramatic changes: his family moved to a new house and Bernie's mother died. Both of these influences, Bernie's view of his teaching area and the changes he had experienced, could be expected to affect Connections.

Tim Schwartz came to Connections with 15 years teaching experience, the last eight within the Cedar City system. Most of his teaching experience, and all of his years at Cedar City, had been as a learning disabilities teacher. But like Sheryl, Tim also had a background in art education. Also like Sheryl, he taught at the junior high before coming to the high school. During the Connections year Tim would also share a life experience with Bernie: Tim's father died in October. All of these aspects of Tim's life and work would shape his Connections experience, but none more than his status as a learning disabilities teacher.

Dan Centers worked for ten years in industry before comng to Cedar City High School to teach physical science and physics in 1990. Some aspects of Dan's life and work that shaped his Connections year were readily apparent: his extra-curricular school roles and his interest and work with educational technology. Dan's role as a senior class advisor claimed many a morning before classes began. Dan's conscientious approach to organization came to the fore as he dealt with the myriad of details involved in his role. Dan also took his membership on both the district's Instructional Council and Instructional Technology Committee seriously. More reticent, quiet, and private than his Connections teammates, the influences of Dan's life beyond school were more difficult to detect. Dan did not often talk about his family.

Before Connections, ties among the four teachers had been limited. Tim and Sheryl were acquainted with each other during their junior high days, and Tim and Bernie shared the acquaintance that came with being coaches. But acquaintance appeared to be the extent of the team's pre-Connections ties. As Sheryl commented,

> Tim, I sort of knew; Bernie was a "hello;" Dan, well, English and science people don't get much chance to know each other.

Sheryl's observation foreshadows a significant structure characteristic of Cedar City High School. So it is appropriate to choose the structural frame to begin this frame analysis.

The Structural Frame

Through the lens of a structural perspective, the architecture of an organization can be seen. Rules, roles, and relationships assume a design, and an organization's effectiveness depends on whether that design is appropriate and adequate to meeting the organization's goals. The elements of design are affected by such structural imperatives as the organization's size, technology, environment, goals, and work force (Bolman & Deal, 1991). For Cedar City High School (CCHS) and Connections, some of these structural imperatives were held in common; others were not. So it follows that CCHS structures would coexist and might well be expected to affect the extent to which Connections teachers would create and sustain a collegial community.

"The Key is Flexibility"

When visitors came to observe Connections and asked about elements essential to successful implementation, the teachers would invariably echo Tim's thought, " The key is flexibility." Conceived and implemented as a program option, Connections implicitly represented flexibility. The Cedar City High School Vision Statement (adopted in 1993) declared the school's commitment:

> We will implement course structures . . . such as the Connections Program . . . In addition to forging links between academic disciplines, our goal is to develop inquiring, responsive minds.

Flexibility, departments, and disciplines. In order for Connections to meet its goal of interdisciplinary study, teachers from three academic disciplines and special education would need to integrate the established curricula for English 9, Physical Science, and World history. This would prove not to be an easy task. Perhaps the single most visible structure at CCHS was apparent in the configuration of corridors by curricular departments. Each subject had distinct geographic boundaries. Reinforcing geographic propinquity, the structure of department chairs bolstered subject departments as the unit of professional community at Cedar City High School. Communication among departments was limited. The common structure of subject departments in high schools and its implications for teachers' sense of identity and patterns of professional community has been well-noted in the literature.[5] CCHS department structures retained an abiding presence in Connections. The Connections teachers, in a nod to the departmental structure at CCHS, chose to rotate the role of "chair." Each Connections teacher retained his or her room within the CCHS geography by department, forming a collegial community among the Connections teachers. To facilitate the process, the structures of summer planning meetings and a common planning period were instituted.

Flexibility and curriculum design. In the course of the summer meetings the teachers decided that a unit structure would provide flexibility in their approach to curriculum content. During the first semester, units of study were driven by the chronology of history. For example, in the unit "Beginnings," Bernie focused on the development of civilizations, Sheryl focused on mythology and *The Odyssey*, and Dan focused on the elements of the scientific method, and measurement in particular. But as the weeks went by, it became increasingly clear that the existing science curriculum did not integrate easily into a chronological approach. The unit structure would need to be modified if Connections' interdisciplinary goal was to be supported. Over the Christmas break, the teachers met and made the decision to "go with thematics," with science concepts, rather than chronology, as the source. Under this new plan, the second semester began with "Structures." Sheryl's instruction centered on grammatical structures, Bernie's on the "isms" (nationalism, imperialism, colonialism), and Dan's on atomic structures and elements.

[5] See Johnson (1990), Little (1992), and McLaughlin (1993), for example.

Flexibility and heterogeneity. Flexibility would also be important as the teachers addressed Connections' heterogeneous student cohort. Like all Cedar City High School students, Connections students entered the high school with the track designation of honors, academic, or general. Normally, ninth grade general students would not be enrolled in Physical Science; that was the freshman province of academic and honor students. Under this structure, Dan's past experience teaching Physical Science had been primarily with academic or honors students. Nor would freshmen normally enroll in World History. In addition, the tracking structure at CCHS provided for separate sections and differentiated curricula within English 9 based on tracks. Clearly, Connections flexibility would require alternative structures.

As the full Connections cohort gathered on the first day of school, the first item of business after introductions was the announcement of student advisory groups. The theory, as developed during summer planning sessions, was that randomly assigning students to groups of 20 per teacher would be a student grouping alternative to tracking that would be consistent with Connections' heterogeneous purposes. In practice, Connections' structures for student grouping could not totally resist the influence of CCHS tracking structures. Student advisory groups were not formed totally at random; all learning disability students and schedules became part of Tim's group. Moreover, as Sheryl explained to a group of visiting teachers, CCHS tracking distinctions could not totally be ignored in the area of English. After all, "honors" Connections students would receive weighted grades in the area of English.

Flexibility and schedules. Another significant area of flexibility lay in the structure of scheduling. Within the seven-period high school schedule, Connections was allocated a three-period instructional block and a common planning period. There would be times when the entire Connections cohort met for the full block — often to work on or present student projects. At other times students would be placed in two groups of two advisory groups each for a more complex period configuration balanced among the three subject areas over a period of three days. This arrangement allowed for lengthy science labs or dramatic historical simulations. When the students were asked for their input at the end of the first semester, they overwhelmingly indicated a strong preference for these alternative schedule options. Perhaps, as Bernie surmised, "They know we can't lecture for three periods." Yet more often than not, the students in Tim's advisory group were parceled out among the three other groups' students and a "regular three-class rotation" was followed. After all, CCHS structures meant Connections student report cards would indicate separate grades for each of the three content areas encompassed in Connections.

Structures: Barriers and Alternatives

As the education reform movement with its frequent emphasis on restructuring would indicate, the structural perspective on Connections' implementation is significant. From a structural perspective, the departmental and tracking framework that characterized Cedar City High School's organizational architecture appeared to work at cross-purposes with the interdisciplinary and heterogeneous nature of the Connections program. Long before the current wave of reform, Seymour Sarason (1971) observed:

> The existing structure of a setting . . . defines the permissible ways in which goals and problems will be approached . . . The existing [structure] is a barrier to recognition and experimentation with alternative ones. (p.12)

The connections experiment would suggest that CCHS structures, while not excluding the Connections experiment, did raise partial barriers to many Connections structures. This is not surprising. As Sarason noted, long-standing structures are neither easily nor quickly changed. Considering Little's twin conditions for collegiality, opportunity and interdependence, the opportunities afforded by Connections' structures (especially as they coexisted with and were influenced by CCHS structures) could not be expected to produce a collegial community in and of themselves. Perhaps, as Bolman and Deal might postulate, the discrepancies between CCHS structures and Connections structures may be traced to differing structural imperatives. With its relatively small size, its innovation purposes and goals, and its particular teaching team, Connections would and should develop unique organizational structures. Yet the relationship between Cedar City High School and Connections was far more complex than their structures alone. The perspectives of other frames are needed.

The Human Resources Frame

The human resources perspective focuses on the "fit" between individuals and the organization in a symbiotic relationship. If an organization is to be effective, the needs of its members must be met, and the gifts each member brings to the organization must be compatible with the organization's needs. Tacitly recognizing the importance of the human resources frame, administrators knew that selecting the members of the teaching team would be of great consequence. As Mike Davis put it, "It was clerical . . . the teachers needed to be enthusiastic . . . Having teachers that parents would recognize as top-notch was important" (Interview, May 11, 1993). Selecting teachers whose skills, abilities, needs, and orientations would be compatible with each other and with Connections' needs and goals would be a strong determinant of the extent to which collegial community developed.

Intensity, Inclusivity, and Orientation

Little and McLaughlin (1993) distinguish three dimensions of teachers' professional relations: intensity, inclusivity, and orientation. Examining each of these dimensions should provide insight into the human resources dynamics within Connections.

Intensity. Intensity refers to the strength of the ties among a group of teachers, especially in comparison to ties with other sources of identity and community. At CCHS, professional ties tend to center around departments. During Connections' implementation, several factors worked together to allow this traditional allegiance and affiliation to shift from departments to the Connections program. The Connections newsletter given to parents at a meeting the week before school started pointed to one factor: "We were chosen for this class on a strictly voluntary basis which gives Connections its best

chance for success." Bernie's comment to a group of visiting administrators in May pointed to another factor:

> Over the summer, we got together maybe 40 to 50 hours. Maybe the biggest thing we got out of it was team building, 'cause we scrapped a lot of it.

Time that would allow teachers to forge ties was also part of the rationale behind Connections' additional common planning period. Yet the common planning period did not always work toward this purpose. One incident in November is indicated. Early one morning, Dan could be found, as usual, at his computer. When asked about plans the group had been working on the past few days, Dan replied, "I don't know. They were talking about it yesterday. I heard something about it." Increasingly, Dan would be present for common planning time (the teachers met in his room during the first semester), but did not join the others sitting together at the table. Instead, he would be readying lab equipment for the day or be seated at his computer. Bernie's presence for the full planning period also became increasingly rare with the passage of time. His coaching duties and the work involved in the American Studies dyad that comprised his afternoons appeared to provide strong competition for Bernie's time. Both Bernie and Dan seemed to be practicing what Hargreaves (1993) has called "strategic individualism" (p. 63). Yet there were times when the common planning time was marked by the full involvement of all four teachers. These moments were often related to crises, whether personal or professional. The deaths of Bernie's and Tim's parents and moments when differences could no longer be ignored served as the impetus for intense common planning period meetings. Shared trials and tribulations would intensify the ties among Connections' teachers.

Inclusivity. The second dimension of professional relations, inclusivity, refers to membership boundaries. On more than one occasion, Assistant Superintendent Davis and Principal Cerny had told the Connections teachers, "This is your baby." Clearly, the teachers took this message to heart; they were reluctant to let "strangers" be involved in the care of their "child." The teaching team's relationship with Dan's second semester student teacher, Jim Pelfrey, illustrates this. Just as second semester with its change in unit focus was beginning, Jim was unexpectedly assigned to Dan. Jim joined the first period gatherings, but he was rarely included in the conversation. Jim's responses during an interview in late April revealed his perceptions of his relationship with the Connections team:

> I still don't feel part of the team. Like yesterday, they kind of asked me for an idea for the introduction to the futuristic unit, and when my response was not immediate, Dan and Sheryl immediately turned their attention away.

As the incident illustrates, the Connections team tended to be exclusive rather than inclusive. The informal roles within the teaching team may have left no room for "outsiders" and so played a part in this exclusivity.

By temperament and expertise, Dan became the computer whiz of the Connections team. It was he who created class lists and forms. Attention to details was also a part of Tim's role, as he served as, in Connections jargon, "lackey." Tim substituted for Bernie or Sheryl when they were ill; he would assist Bernie in organizing and running historical simulations or dramatizations; and he quite often took aside students who needed individual attention with English reading assignments. By mid-September when I asked Tim to characterize his role within the team, he was quick to say, "I see myself as the most flexible — I can jump off and go wherever I'm needed. I'm used to that as an LD teacher." Sheryl was often the organizer of the group, telling her colleagues, "Hey, guys, we've gotta . . ." By gender and inclination, Sheryl also took a motherly role. She brought home-baked goodies to share, handed tissues to those with colds, and inquired about families. Bernie was the "idea man" for the team. His participation in planning often began with "What if we . . .?" It was also Bernie who would often tie the conversation to broader issues, as when the teachers and administrators met in January to reflect on Connections at midyear. The discussion turned to the relative success of students from various tracks within Connections, and it only took a few minutes before Bernie observed, "It's the old philosophical question, isn't it? How do we meet individual needs?" Bernie's question provides a segue to the third dimension of professional relations: orientation.

Orientation. Orientation refers to teachers' value dispositions: their conceptions of subject matter (fixed or malleable) and their conceptions of their students as learners (motivated, academically able). If Connections were to be true to its interdisciplinary goal, the teachers would need to uncover, rather than cover, their traditional and established curricula. Yet the teachers' autonomy in creating Connections' curriculum was not total. Since Connections was a pilot program option, students would need to be able to rejoin the traditional curriculum successfully in their sophomore year. So, expectations inherent in the articulated Cedar City English and Science curricula dictated many of the teachers' choices. As an elective, World History could be more flexible. But within these strictures, Connections teachers' conceptions of their disciplines would allow for varying degrees of adaptability in their approach to content.

Science proved to be the least adaptable. Natural ties between science and history and English were elusive. On those occasions when his colleagues bemoaned the seemingly inability of science to "connect" with their disciplines, Dan would say, " I'm not a science historian." In one interview, Dan expanded on this comment:

> It's never been easy to connect academically. I wasn't taught that way . . . . I know it's me . . . I don't care about names and dates. I don't want it to be artificial, contrived, a surface connection. The kids see through that.

Dan's thought hints at two factors at work in the teachers' ability to adopt a malleable conception of their subject area. Their own learning experiences did not reflect an interdisciplinary view. Moreover, in the highly specialized world of secondary teacher preparation and departmental structures, they were not familiar with each other's content. Sheryl and Bernie knew little about elements or Newton's laws; and Dan knew little about *To Kill a Mockingbird* or medieval history.

Common planning period content sharing was limited — mostly to coordinate and accommodate individual subject-area plans.

Orientation also bears directly on the well-documented relationship of dependency between teachers and students. Teachers rely on students for their sense of satisfaction and efficacy.[6] Given Connections' heterogeneous student cohort, the teachers' conceptions of student motivation and abilities could be expected to powerfully affect this relationship. McLaughlin (1993) describes three general patterns in teachers' classroom responses to students. Teachers could maintain traditional standards and conventional practices; they could lower their expectations; or they could adapt their practices and pedagogy, broadening their definitions of achievement and creating active roles for students. Both the first and last occurred in Connections. The first could be seen in " the lab book crisis." The main activity in Dan's science classes was lab work, Dan had very specific requirements for an appropriate lab book, and lab reports would not be graded until they were recorded in a lab book. A form of gridlock took shape as Dan's standards were not altered and many students had not secured "correct" lab books several weeks into the first quarter. Bernie and Tim attempted to break the gridlock, but were only partially successful. The incident would color the relationship between Dan and many of the Connections students.

The " lab book crisis" notwithstanding, the third pattern, adapting practice and pedagogy, was often evident in Connections. In a clear departure from traditional CCHS classes, Connections' most visible pedagogical method was student projects. When students accompanied the four teachers on " recruiting trips" to present Connections to eighth-grade students, Amanda's remarks were typical:

> We do projects all the time. It's project after project . . the Renaissance Fair . . . the Quests . . . the twentieth century time-line . . . the final projects we're working on right now.

In fact, Connections' first day involved a group project. As students worked in groups of four for two periods to construct cardboard bridges that would sustain the weight of several bricks, and then presented their work during Connections' third period, teacher comments could be overheard:

> Sheryl (to Tim): That girl who's doing all the work — she's a general kid who almost didn't make it. I love it!
>
> Bernie (to Sheryl): You gotta see some of these designs!
>
> Tim (to Dan): Know what? Three of these are mine [LD] and I didn't even know it. Look at them!

The tracking stereotypes that pervaded CCHS began to be broken on the first day. The first day's success allowed the process to continue. By the end of the year, when I asked each teacher to reflect on various aspects of their practice, their comments revealed a consensus:

> The general kids performed above expectations and their expectations . . . . They constantly amazed us. . . Seeing the LD students rise to the occasion so often has been significant.

This uniform perception did not always mirror reality. Many of the Connections projects had been tied to English and/or history; few had included science. Moreover, several students, all general or LD, "failed" science.

"The Vision Thing"

Ultimately, it was the dimension of orientation within the human resources frame that produced a rift in the team. The teachers' individual stances were the products of years of experiences as teachers and learners; changes would not come swiftly. As frustrated as the teachers were by their inability to forge academic connections with science, the major stance that finally separated Dan from his colleagues was the three other teachers' conception that Connections was about ensuring student success. Sheryl, Bernie and Tim questioned whether Dan would or could (as Sheryl put it) "buy into" the "vision thing," and adopt the orientation they shared. By the last week of school, in the minds of his colleagues, Dan's continued membership on the Connections team was in question.[7]

The Political Frame

The political perspective focuses on the relationship between coalitions and resources within an organization. At CCHS, coalitions were defined by departments and their competition would revolve around such resources as status, time, money, and space. As George Cerny told a group of visiting administrators, "We are fragmented." During the Connections year, concern for school climate was such that one focus of the school's ON-TASC (Ohio Network: Training and Assistance for Schools and Communities) three-year grant was on improving staff morale. Polarization by department was especially evident in the intense jockeying for "old" science rooms when the new science wing was ready for occupancy at mid-year. Yet the year also brought at least a brief opportunity for coalescing across departments as teacher concerns rose about the potential effects of a community group known as Freedom 2000. Two candidates for the Board of Education appeared to be allied to this emerging group with ties to the religious right. The local teachers association sprang into action, sponsoring a "Meet the Candidates" forum and acting to recommend three candidates. Neither of the Freedom 2000 candidates was elected, and the threat passed. So, too, did staff unity.

In the spring the Board acted to place an operating levy on the May ballot and to make budget cuts. As resources became more scarce, the political relationship between Connections and other CCHS coalitions became more apparent. A grant had assured Connections of abundant money resources. Teachers received a stipend for their summer planning sessions, and teachers' requisitions for instructional materials could be liberally granted. While other teachers' days would include a "duty" period, Connections teachers were given a second planning period in common. As George Cerny observed, "People sort of resented that a little bit, and rightly so." Part of the resentment may have stemmed from

[6] See McLaughlin (1993), Lieberman & Miller (1990), Pauly (1991), and Cohen (1988).

[7] Events during the following summer evidently resolved this difference sufficiently for Dan to remain with Connections as its second year began in August, 1994.

the status and publicity Connections received. When Connections teachers approached the principal with the idea of allocating the old science rooms to Connections so they wouldn't be so scattered, Cerny had ambivalent feelings. He could see the practical validity of the teachers' request, but he feared that dedicating a wing to Connections, interdepartmental dyads, and the status as a separate "department" implied by such geography would "further isolate them. They need to keep a foot in the work of the rest of the building."

Just as a political perspective illuminates the relationship between Connections and CCHS, it also sheds light on the relationship among the Connections teachers. From a political perspective, the Connections teachers can be seen as representatives of the coalitions at CCHS. Coming to Connections with affiliations with their departments, Connections teachers could be expected to embody the "enduring differences . . . in values, preferences, beliefs, information, and perceptions of reality" (Bolman & Deal, 1991, p. 186) of their respective coalitions. According to the political frame, conflict among the teachers over these enduring differences would be inevitable and would be resolved only as power would be exercised in a negotiation process.[8] Understanding who had power and how power was exerted, then, become important in the organization's approach to conflict, and concommitantly, community. Power takes many forms: expertise, coercion, charisma. With his master's degree in gifted education, his tenured status, and his nine years at CCHS, Bernie clearly possessed the power of expertise. He also, as the district newsletter profile suggested, was charismatic. Only slightly less charismatic in the eyes of students, and with her 25 years of experience, Sheryl also held power within the Connections team. But both Sheryl and Bernie carefully observed the traditional school norm of mutual noninterference among teachers and so tended to avoid conflict. Moreover, while both Bernie and Sheryl held power, neither held authority. Bernie and Sheryl did speak to administrators who, with the leverage of evaluation and considerable rewarding and coercive power, might have intervened. Yet to do so would remove considerable autonomy from the team, and both Davis and Cerny preferred that the teachers resolve any conflicts among themselves. In terms of power, a condition of stalemate prevailed.

The Symbolic Frame

The symbolic perspective posits that in the face of the uncertainties of organizational life, symbols and the culture they reflect help people find order and meaning in their experience. Certainly, the education enterprise is fraught with uncertainies.[9] As an innovative pilot program, Connections could be expected to pose even more uncertainty. Indeed, Sheryl told the Board of Education, " We were all apprehensive at first." As the symbolic perspective suggests, rituals, ceremonies, myths, and sagas would be quite visible in Connections' implementation.

Each day at Cedar City High School began with a ritual. Promptly at 7:45, the assistant principal's voice would come over the public address system saying, "Good morning, and welcome to [Cedar City] High School." Pep assemblies, Homecoming activities, the junior-senior prom, and all the myriad of CCHS traditions attested to the symbolic aspects of life at CCHS. Powerful norms also prevailed at CCHS. One, in particular, profoundly affected the Connections teachers' ability to merge their previously individual practices in a collective, interdependent practice. At CCHS, as at most schools, a norm of mutual noninterference was rigorously observed. Teachers might notice differences among their separate practices and disagree with many, but private thoughts never became public discussions. As evident as symbols and cultural norms were in the life of CCHS, they would be even more apparent in Connections.

Faced with the tasks of preparation, it is notable that the Connections teachers chose each other's homes as the sites for their summer meetings. Hospitality, and the associated ritual of breaking bread together, would be a hallmark of team-building in Connections. Each morning the aroma of coffee accompanied the common planning period meetings. Other rituals attended common planning time. A large white marker board served as the vehicle for planning each week's activities. Certain days were reserved for certain purposes — Thursdays were planning days, and Fridays were for "talking about kids."

The Connections classes bore their symbolic marks as well. During the first semester, the entire Connections cohort gathered together each morning, ostensibly for attendance-taking. But the gathering promoted social solidarity among students as well. The structure of student advisory groups also had a symbolic dimension of identity. On the first day, other Connections traditions were born. Group work, student-constructed knowledge, and public presentations would become hallmarks of the emerging Connections culture. The first day also gave birth to the first story in the Connections saga.

Oft-repeated, the "phenomenon of the unheard bell" figured prominently in Connections lore. On that first day, as groups of students were busily engaging in the task of constructing bridges, the CCHS end-of-second-period bell sounded. No one, teachers or students, noticed! Other stories — like one mother's tale of her LD son's rapt reading *Romeo and Juliet* and his telling her, "This is so cool; have you ever read it?" — would assume their places in Connections' growing saga. Each story was a success story, validating Connections as a program and the teacher's work. And each story contributed to an emerging vision of what Connections was all about.

As Fullan (1993) asserts, "Vision emerges from, more than it precedes, action. Shared vision, which is essential for success, must evolve" (p.127). Vision-building is a process. The symbolic elements of ritual and cultural norms were part of that process for Connections. Central to the Connections vision, as the saga stories indicated, was a cultural norm that valued a flexibility of pedagogy designed to ensure student success.

Conclusions

The structural, human resources, political, and symbolic frames overlap. Politics and structures at CCHS were mutu-

[8] For a discussion of the power and political dynamics of schools, see Blase (1991).

[9] For example, see Flinders (1988), Rosenholtz (1989), Jackson (1986), and Cohen (1988).

ally reinforcing, most notably for departments. Many of the structures Connections devised had symbolic value as well. Human resource orientations were often the by-product of teacher experience within the structures of CCHS. Politics limited options in structural change. Symbolic rewards and political rewards coexisted.

Faced with uncertainty, The Connections teachers initially relied strongly on creating a separate Connections culture. Since the Connections teachers worked both in the world of Connections and the world of Cedar City High School, the creation of a distinctive Connections culture appeared to be an attempt to compartmentalize their work. However, the two worlds could not be totally separated. Areas of conflict abounded. The CCHS structures of departments and tracking conflicted with Connections' interdisciplinary and heterogeneous nature. CCHS schedule and grading structures intruded. Connections' abundant resources conflicted with increasingly scarce resources for the school as a whole. The pervasive school norm of mutual noninterference dictated that the Connections teachers avoid open discussions of their differences in personal orientation.

Within the Connections teaching team, the structures and symbols the teachers created supported collaborative opportunities. Many of the often-cited supports seen as necessary for collegiality (Little, 1990) — administrative support, decision-making power and autonomy, common planning time, training and assistance during the summer, and material support — were in place during Connections' implementation. Shining moments of collegiality occurred. Yet the collegial condition of interdependence proved chimeral. In the final analysis, the dimension of teacher orientation proved the most important to sustaining collegial community. Its importance became most clear at the end of the year when Dan's continued membership on the teaching team hinged on his willingness to share what Sheryl termed "the vision thing."

For Connections, time was necessary to collegial community. Only through time did communication become open and honest, confronting and attempting to reconcile differences. Only through time did trust grounded in mutual professional respect become sufficient to overcome the traditional norm of mutual noninterference. Only through time did a shared vision emerge. Only through time did the teachers' initial commitment to try a program become a commitment to the program.

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by Sharon McNeely

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- Over 240 sessions. Great effort, exciting presentations.
- Presenters came from all over the US, not just the midwest.
- Some glitches, yes...but all's well that ends well.
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Barbara Shade
Invited Address: Culturally Compatible Classrooms

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Through Their Eyes: Teacher Self-Assessment[1]

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Abstract

This exploratory study gathered information about teachers' self-assessment practices. Thematic content analysis was applied to data collected from discussions with 17 teachers broken into 4 focus groups. Among the topics explored were teachers' general impressions of self-assessment, use of formal and informal measures in self-assessment, specific areas of self-assessment, personal standards/ criteria used in self-assessment and impediments and aids to the self-assessment process. From this initial investigation, it is evident that teachers engage in a variety of self-assessment activities, find them useful in understanding and improving their teaching practices, and need more quality time, relevant feedback and a strong support network to participate in meaningful self-assessment.

Teaching is an activity fraught with uncertainty. Every day, teachers wonder about the success of their activities and strive to convince themselves that they have had some influence on their students. To reduce this uncertainty and to provide information about the success of their endeavors, teachers engage in self-assessment, the process of collecting evidence about one's performance and using this evidence to make judgments about personal accomplishment. Its main purpose is to help teachers gain an understanding of their practice so that it can be improved or refined. In this sense, teacher self-assessment is a formative evaluation of oneself with regard to one's practice. Self-assessment is a common process all teachers carry out to form their own personal, professional knowledge and to assess their instructional effectiveness on a day-to-day basis (Schon, 1987; Ross, Cornett & McCutcheon, 1992).

Airasian and Gullickson (1994) point out that teacher self-assessment is the most common of all teacher assessment techniques. The fact that it usually goes unnoticed, because it is carried out informally and unobtrusively by teachers, should not obscure its importance in the professional life of a teacher. The most important assessments of professionals are the ones conducted by the professionals themselves (Stufflebeam & Shinkfield, 1985). Opportunities to explore one's values, practices and beliefs, often can lead to questioning and subsequent reflection of one's patterned expectations and norms (Argyris & Schon, 1974; Nais, 1987). When individuals are encouraged to reflect on and revisit beliefs and practices; awareness, improvement and growth occur. Clandinin and Connelly (1988) suggest that the best way to improve practice is to help practitioners monitor their own behavior by self-assessing and becoming more aware of their practice. Also, encouraging teachers to self-monitor is the best way to give teachers a true "voice" in their practice (Gitlin et al., 1992).

The purpose of this study was to gather information about teachers' self-assessment practices. The information collected was intended to shed light on questions which have gone virtually unexplored in the educational assessment literature, questions such as: how do teachers know when they have taught a good or poor lesson, what criteria or standards do teachers use in their self-assessments; what factors initiate teacher self-assessment, and what factors impede it. Answers to these questions will help link teacher self-assessment activities to their professional development. This study is an initial step towards making such a link.

Data Collection

The sample in this study was purposefully chosen. Nominations of teachers in grades one through five were solicited from a principal, a curriculum director, and a veteran teacher in three school districts. Nominators were asked to submit the names of teachers judged to be "excellent" and reflective about their practice. Teachers with these characteristics were sought for the study because it was felt that they would be more conscious of and able to discuss their self-assessment practices. Nominated teachers were then invited to participate in one of four focus group discussions on which this study is based. A total of 17 teachers participated.

The focus groups varied in size from three to six teachers. Only elementary teachers were involved and most teachers were in self-contained classrooms. Teachers of grades one through five were selected from a total of eight different elementary schools in the three communities. All the teachers participating were female, and years of teaching experience ranged from 2 to 24 years. Group discussions were held after school or during release time in the elementary schools of each of the three school districts represented.

The focus group sessions were facilitated by one or both of the investigators and varied from 45 to 75 minutes in length. In order to provide some focus to the discussions, a reflection sheet was sent to the teachers in advance of the group meeting. It was necessary to provide a structure for the groups because the concept of self-assessment is open to many interpretations and because of the limited time-frame for discussion with each group. Specifically, the reflection sheet told teachers that "we would like to enlist your aid in helping to better understand the

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self-assessment and self-improvement processes as they occur in classrooms" and "in essence, we're trying to understand the ways in which teachers judge their own practices, actions and accomplishments." Also as advance organizers, teachers were given suggestions of the kind of topics likely to be discussed in the focus group. For example: "How do I know when I've taught a good lesson? What information or indicators do I use? If I'm not sure how well the lesson went, how do I go about finding out?;" "How do I know when my students are learning?;" and "Think about the last few days in school to see whether you can recall specific situations in which some or all of these questions arose."

After an introduction which reiterated the general purpose of the study and the focusing questions, teachers were asked to discuss the viability of self-assessment as an aspect of teacher practice and their experiences with self-assessment. Care was taken to allow the discussion to evolve from the teachers' comments. Given the limited amount of discussion time and the goal of this exploratory research, investigators reserved their comments to posing general questions and asking for elaboration of teacher responses. Each session was audio-taped in order to accurately record the teachers' responses. The session transcripts show that the majority of the focus group discussion (i.e., approximately 85-90% of the transcript) consisted of the teachers' responses, comments and discussion among themselves, and not researchers' directives or comments.

Data Analysis

The transcribed audio-tapes totaled 129 pages and were analyzed using thematic content analysis. Each of the four interview sessions was analyzed separately and independently by each author and emerging themes coded. The coding scheme was generated from multiple readings of the transcripts in search of recurring issues, views, and practices. Notes made in the margins of the transcripts served as the basis for the coding strategy. The researchers compared their codings and reached consensus on coding disagreements through discussion.

For this study, to be considered a theme, the coded concept had to be mentioned by at least two teachers in a focus group. In order to find common themes, comparisons of the codes were made across the individual session transcripts. A common theme was one identified in at least two of the four groups. The thematic content analysis resulted in the following five general categories or themes: *self-assessment indicators, formal evaluation measures, time for self-assessment, assessment support,* and *use of standards*. Each theme will be discussed.

It should be noted that the focus group transcripts served as the sole source of data in this study. Given the exploratory nature of the study, no attempt was made to employ triangulation techniques using data other than those collected during the focus group discussions. However, more than one focus group discussion was held and responses were compared across sessions to lend more depth to the analysis. Also, when interpreting the findings, it is important to keep in mind that the context boundaries for the focus group discussions were defined largely through the use of the reflection sheet distributed to teachers prior to the group discussion.

Results

Self-Assessment Indicators

An area that teachers commented on extensively was the indicators or "triggers" which caused them to self-assess their practice. For example, in discussing how they knew a lesson was going well or poorly, teachers identified two distinct types of indicators: process indicators which occurred during or inside of practice and product indicators which occur after or outside of practice.

Process indicators occurred during teaching practice and involved using students' reactions as an ongoing barometer of the success or failure of a lesson. Not unexpectedly, all teachers reported constant self-assessment of their teaching through students' reactions and involvement. The most commonly used process indicators were students' attentiveness, body language, questions, and facial expressions; indicators that exist in abundance during the teaching process. Most of these indicators occurred spontaneously and informally during instruction. Teachers also noted that interpreting process indicators is somewhat intuitive and that accurate interpretation was vital to effective utilization of these indicators as signals for self-assessment.

> I watch their feet a lot, if their feet are wiggling around, I know they are kind of "antsy." Either nervous or bored, but when their attention is really riveted they don't move at all.
>
> I tend to use vocabulary that's above their grade level so I'm constantly tuning in to facial expressions and I've really tuned into a blank look.
>
> If they're all over the place, wiggling all over the place, you know that you've gone on too long and they're not getting it, or it means you should try something different.
>
> To give an example, we do a science unit on sound and you have this "feel" for when things are going — when it's genuine interest or involvement, or when it's just stepped over the edge. They're losing it and are distracted, they're misusing the equipment or whatever. I mean it is just very clear.

Self-assessment product indicators were linked to post-teaching activities and thus focused on indicators such as the frequency and type of questions students raised, and student frustration or excitement levels immediately at the end of the teaching process. Other product indicators surfaced well after teaching was completed: students' demonstrated knowledge from one lesson to the next, parental feedback concerning student's progress, and even past students returning to visit.

> When students that I've had in elementary school come back to me in high school or in college (or parents) and tell me what kind of effect such and such a thing had - then that is when I feel that I'm doing the right thing.
>
> Whether they go to their desk immediately . . . slow to get up and drag and not ready to start — and show look of puzzlement . . . But also, kids in their own voices will say: "I don't understand any of this!"
>
> The kids' responses are really important and I'd like to see kids carry things over. I'm not talking around the time of the lesson, I'm talking days or weeks later. How are the kids responding to that one lesson, are they even using it, is it something applicable to their every-day lives, and you hear them using it.
>
> I do put a lot of weight on students sharing with me what they have learned, whether it's in a journal from a student who has a lot of difficulty or blocks about writing, what they're getting out of something in answering specific questions, talking to them, . . . all of that goes into whether I'm doing what I think I need to be doing as a teacher and evaluating that as it's going on.

Thus, as evidenced by these comments, teachers do view themselves as self-assessing, are prodded by informal process

and more formal product indicators, and derive most of their evidence from student-generated sources.

Formal Evaluation Measures

A second theme which emerged from the focus groups was a reported general lack of impact that many types of formal evaluation information had on teachers' self-assessments. For example, students' standardized test-scores and homework were not viewed as being especially helpful in informing self-assessment by most teachers.

> So, generally homework for me is a reinforcer. I generally like to think that it's [the topics covered in the homework assignment] something they've got a pretty good grasp on. Every now and then you get surprised and it comes back and you're like: "Oh, I thought they knew what they were doing here!"
>
> I use homework for different kind of assessment. I use it for an assessment of their own sense of responsibility. It's [homework] an assessment of — do they have a study space at home, how reliable are they in returning stuff, do they get assistance or do they not get assistance.
>
> I don't put much weight on formal testing. I do put a lot of weight on students sharing with me what they have learned.
>
> I can see where it would be easy to fall into a trap if you want your kids to do well on a standardized test, and if they don't do well, does that mean that you need to adjust your teaching to allow them to do better on standardized tests? So in that sense you are self-assessing. Okay, I need to change my curriculum to allow kids to do well on the standardized test, but if you're not a person who has strong beliefs in general about what standardized tests tell you - then maybe you need to say 'Well, that's interesting!' and move on.
>
> I don't find tests very helpful [in my self-assessment]. Every year the fourth grade does the assessment test. I just didn't find that helpful. I didn't find that it matched what I was doing, didn't match the core curriculum that we're teaching at all. . . . I guess, no, it didn't help me because I didn't feel like I could do anything better unless I literally taught the test.

Similarly, for most teachers, the principal's formal evaluations were, in themselves, not viewed as providing useful information for self-assessments. Teachers did feel that they gained more insight about their practice from their preparation for the evaluation, than from results provided by the principal. This perception suggests that the process of preparation for an evaluation constitutes a useful self-assessment activity for teachers. It is likely that an impending evaluation forces teachers to step out of the action of teaching and begin to reflect more thoughtfully on their teaching practices and beliefs.

Many of the teachers felt that principals' evaluations had the potential to be a useful source of self-assessment information. Specifically, teachers felt that principals' evaluations would be more useful if the principals were better trained, spent more time getting to know the classrooms they evaluate, placed a greater emphasis on improving teaching, and followed up on suggestions they make. Overall, there was agreement that, based on their experiences, the results of traditional principal evaluations themselves provided little relevant information for self-assessment.

> I learned more preparing for those visits [principal's evaluation]. . . . You're preparing, you're planning, you're thinking about your style. You're thinking "what is the best thing I want to do? What do I want to show this person?"
>
> I naively went into it [the evaluation] thinking that the purpose of a principal coming into the classroom was to be helpful to me, to say 'you should do this this way' but it really isn't that — in that it is set up to find out if you're going to be rehired or not.
>
> I was observed last year and the principal kept a beautiful running record of the entire classroom, and that to me was wonderful . . . except that in the evaluation there was little or no reference to the beautiful running records that were kept. . . and then there's no follow-through.

Time

The most frequently noted theme focused on teachers' concerns about time. Lack of time was seen as the primary impediment to self-assessment, with special emphasis on the constant daily interruptions that teachers must contend with and the furious pace of teaching. The time allocation problem became a personal bargaining situation for teachers, one in which they noted that self-reflection and self-assessment are often the first activities bargained away.

In one sense this seems contradictory, since the teachers who earlier reported engaging in various types and levels of self-assessment also feel they don't have enough time to self-assess. The distinction between reflection inside and outside of practice sheds light on this apparent contradiction. Teachers reported doing a great deal of self-assessment "inside" practice, that is, the automatic, ongoing, informal reflection and monitoring that occurs simultaneously with the teaching process. However, self-assessment "outside" practice, that is more formal, reflective, time-consuming self-assessment, such as occurs prior to the principal's evaluation visit, is difficult to find the time to do.

> I really don't have much time to do this and that [self-assess] in the frantic pace we're keeping. It's [self-assessment] not something we really take time to do a lot of.
>
> I think we need to have those kinds of times when we can sit and we just talk about what's working and what's not, and remind each other of what we know and what we use, and bring it to the forefront because there is not enough time for that.
>
> I don't think we put enough emphasis on this [self-assessment] because of the frantic pace, you barely have time to do all the other things that somehow take priority.
>
> It's frustrating, and I think that sometimes teachers feel put upon because so much is expected and sometimes your self-assessment can fall into the cracks.

A second dimension of time noted by teachers concerned the fact that certain points in the school year have particularly time-consuming activities that must be completed; for example, the administration of standardized tests or giving report card grades. At these times, it is especially difficult for teachers to find time to engage in outside-of-practice self-assessment activities. Finally, teachers mentioned that self-assessment in the beginning of the school year is difficult because they do

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not know their new students very well and thus have a difficult time interpreting process indicators.

Overall, the teachers interviewed felt that when they were able to take the time to engage in formal self-assessment, it was time well spent. They said they gained valuable insights which were reflected in future teaching. Furthermore, these teachers reported feelings of frustration from knowing how valuable self-assessment outside of practice can be, and not being able to find the time to carry it out.

Assessment Support

Another theme common to all of the focus groups was the teachers' desire for support to conduct self-assessment. Teachers mentioned that administrators needed to be supportive by providing time for them to conduct in-depth, formal, "outside" practice type of self-assessment; as well as relevant, meaningful professional development experiences. In providing support, it was imperative that administrators foster a "safe" environment for teachers to engage in self-assessment. A safe environment was viewed as one in which teachers could engage in self-assessment activities secure in the knowledge that any evidence collected would be used solely for personal improvement purposes. Furthermore, teachers felt that it would be beneficial for administrators to schedule time for teachers to share their experiences with each other.

> But you [another teacher in the group] bring in a really important piece, and that is the ability to look at myself and not feel threatened by that. And that, that's a safety issue for educators. I mean, we try to create safety within our own classrooms, but as educators we need to have that same level of safety.
>
> A common expression is that you get your best ideas from other teachers at school. I think that's true, but in the past we haven't been encouraged to do it, and people view it as threatening. They view it as another kind of evaluation, and that the bottom line in any of this is if you really want to make adjustments in your practice and you involve another person, you have to trust them.
>
> I think that's very specific to buildings and the people in the environment. I've worked in a place where it wasn't — it wasn't safe to ask for help, so you stop assessing after a while. . . . you almost got to the point where I don't want to know when I'm messing up because I can't go to anybody anyway. I'm in here all on my own without any support - so, I'm just going to try to survive.
>
> So once you kind of highlight what you want to work on, you have to rely on larger factors to help you grow — like the administration. There has to be enough opportunity offered for teachers to work — one is sitting in in-service.

Support from colleagues was also viewed as an important component in the creation of a safe, non-competitive, professional environment. Collegial support was seen as a necessity in order to divert any tension which might result from a competitive environment and away from the self-assessment experience. Also, teachers expressed a desire to discuss with other teachers as they conducted their self-assessments, valuing an objective perspective and peer's experiences,as well as the understanding and satisfaction that comes from sharing the results of their self-assessments with other teachers.

> Again, I think that's why it's so important to have a chance to talk to other people about those kinds of things [negative and positive experiences in the classroom] because they can really help you . . . sometimes just talking it out with someone — you almost know the answer yourself in terms of what you should have done.
>
> When you talk to someone about it [positive and negative experiences in the classroom] you hear yourself say it and you think about it. But, also you get the support from each other — that's real important.
>
> I mean I've had teachers come up to me and say, why are you doing that? Are you just doing that to make us look bad? To me they were very serious. It really bothers me because I don't look at it [teaching] as competition.

Standards

A final theme from the focus group discussions concerned the standards teachers used to make judgments about their practice. The term "standard" was purposely used in the group discussions to focus teacher responses on the implicit or explicit levels or benchmarks they used in self-assessment to determine the success or failure of activities or outcomes. This theme investigates whether or not teachers had conscious standards for judgment, and the nature and stability of these standards.

All teachers said they did have standards for their self-assessments, but had a difficult time describing them precisely. In attempting to define their self-assessment standards or criteria utilized, the attainment of a particular goal or objectives was voiced repeatedly. The discussion included descriptions of concrete and also more fleeting goals. Concrete goals included reaching mandated curriculum aims, monitoring gender bias behaviors, and maximizing individual student academic and social development. Less concrete goals were also noted by teachers when they spoke of a "feel for," a "sense of," or "an intuition about" the ideal noise, activity or interest level in a "successful" classroom. Questions of how teachers identified deviations from the ideal produced responses of "it's a feeling," "I just know," and the like.

> I wonder how much of it [standards] is sort of an intuitive gut feeling that grows and gains substance and depth the more years in which you teach.
>
> In the school I came from [attended] before I became a teacher . . . teachers would play favorites. No matter what you did you could never please them. So, when I became a teacher, I made up my mind that if I didn't do anything else, I was going to be fair and treat everyone equally. So, I work very hard at that.
>
> I think that I'm comparing myself to the best of what I've read . . . I'm looking for the best that is out there in terms of research.
>
> It's to me always a question of how well the kids are doing. . . . I sort of look to them to reflect back to me how well I'm doing. If they're not getting it . . . and they're looking at me like "I don't get this!" you know if they're confused or if they're frustrated, that's sort of a mirror for how well I'm doing.

It is interesting to note that teachers differed in the standards they used to assess common issues such as classroom control or academic growth. Also, teachers' personal standards were flexible and context dependent, such that a teacher's standards could be altered based on the nature of an activity or their own personal,mental and/or physical comfort level.

A complicating factor to add to that is your own mental frame. Some days you can handle more than others and other days you look at it and say "if that had been yesterday I would have said Okay, but it isn't yesterday and my whole mental outlook today was such that I couldn't handle this."

Now my style and my counterpart in the building . . . it's very different. I'm able to tolerate a lot of noise. You know, that's just our different styles. So, . . . if it's noisy and they're involved — that's fine. But, to someone else, it may seem that my room's totally out of control. Sometimes what you thought were certain standards are thrown right out the window because you're dealing with new issues. I think a lot of it comes with a certain experience of working with people.

You still have to stand on your judgments, because I have a different feeling or philosophy on how something is going to work in my class. Or a different personal style, I happen to be very loud and boisterous,and a person who is very quiet and reserved may have to use another course. You still have to be some sort of judge about: Well is this going to fit in, does this fit in with what I believe in, does this fit with what I can do, does this fit with my personality and style?

Summary

Overall, teachers described self-assessment as an on-going, unconscious process involving many different types of cues. The cues or indicators tended to break into two groups, those associated with the teaching process and those associated with teaching products. The vast majority of process indicators were associated with immediate student feedback to the teaching process. Product indicators were linked to post-teaching activities and included student frustration and excitement levels, parental feedback, and measures of student academic growth. While process and product indicators were seen to be valid evidence for informing their self-assessments, the majority of teachers viewed formal student and teacher assessment measures, such as standardized tests and principal's evaluations, as considerably less valid and useful.

The major impediment to self-assessment was time. Teachers were frustrated by the lack of quality time they had to carry out formal out-of-practice reflection relative to their desire to engage in self-assessment activities. Teachers noted that administrative and collegial support were necessary to foster a suitable environment in which self-assessment could occur. Administrative support desired by teachers included unencumbered release time and appropriate professional development experiences. In addition to support from the administration, support from colleagues was also noted as invaluable to the creation of a "safe" environment in which honest self-assessment could be carried out.

A final theme which emerged from the group discussions concerned teachers' standards for their self-assessments. Teachers strove for both concrete, tangible self-assessment goals such as reaching mandated curriculum aims, as well as more abstract ones in which they relied upon intuition and feelings. Moreover, goals and objectives varied from teacher to teacher, and were adjusted according to the classroom context at any particular time.

From this initial investigation, it is evident that teachers engage in a variety of self-assessment activities and find them useful in understanding and improving their teaching practices. It is also apparent that teachers need more quality time, relevant feedback, and a strong support network to participate in meaningful self-assessment. Given the harried pace of teaching, the need for immediate feedback, and lack of formal reflection time, teachers may come to over-rely on informal, internal, "inside" practice type of self-assessment activities. It has been suggested that by supplementing informal, unplanned, intuitively based teacher self-assessments with more formal, planned, objective "outside" practice techniques, distortions of self derived from subjective evidence may be avoided (Airasian & Gullickson, 1994). Before self-assessment can inform professional development and help teachers, it must strike a reasonable balance between data from inside and outside of practice.

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Invitation for Proposals

Annual Meeting of the Mid-Western Educational Research Association

October 2 - 5, 1996

Holiday Inn - Mart Plaza, Chicago Illinois

Kim K. Metcalf, Program Chair

Proposal Deadline: April 1, 1996

Plan now to attend the exciting 1996 Annual Meeting of the Mid-Western Educational Research Association. The 1996 program includes a variety of features which reflect the tremendous growth and energy of the organization while maintaining the strong collegiality and support for which MWERA is known. A wide array of presentation formats, including symposia, panel discussions, workshops, forums, allow authors the greatest flexibility in disseminating their work. Plenary session will feature respected scholars representing a range of perspectives on education and research issues. And, perhaps, most exciting will be the new conference site, the Holiday Inn at Mart Plaza. The hotel features comfortable, modern conference rooms, spacious guest rooms offering breathtaking views from high above the city, an indoor pool and exercise facility, and hundreds of shops, restaurants, and entertainment only a short, safe walk away.

Please accept this invitation to participate in the 1996 Annual Meeting. Mid-Western Educational Research Association offers researchers and scholars of all types, perspectives, and levels, the opportunity to share ideas in a supportive yet challenging environment, to strengthen existing professional friendships, and to build new ones.

General Information

1. Any educational professional may submit a proposal, whether or not a member of MWERA. Non-members must join MWERA upon notification of an accepted proposal.
2. Typical presentation formats include paper presentations, roundtables, poster-paper sessions, and symposia, among others. However, alternative or experimental formats which may be better suited to the nature of the research are welcomed. Participants are encouraged to propose formats which best communicate their scholarship or which promote scholarly debate about research and theoretical issues. The Program Committee reserves the right to make final decisions concerning presentation format, grouping, or scheduling.
3. **All proposals must be received by the appropriate senior division chair not later than April 1, 1996.** No submissions will be accepted by FAX or e-mail. **Please note that this date is approximately one month earlier than in the past.**
4. Papers presented at MWERA are expected to present original scholarship conducted by the author(s) and which has not been previously published. Further, it is a violation of MWERA policy to promote commercially available products or services (except as Exhibits) which go beyond the limits of appropriate scholarly/scientific communication. Individuals who wish to display educationally related products or services are encouraged to contact Dr. Sharon McNeely, Assistant Program Chair for Exhibits, P.O. Box 34421, Chicago, Illinois 60634, (312) 794-2788.
5. All persons attending the Annual Meeting, whether as participants or presenters are expected to register for the meeting. All sessions listed in the program will be open to any registered participant; however, enrollment may be limited and a small additional fee may be required for some workshop sessions. Registration materials for the Annual Meeting will be published in the *Mid-Western Educational Researcher* or can be obtained by contacting the Program Chair or any Division Chair.
6. Presenters are responsible for submitting a completed version of their conference paper to both the chair and discussant assigned to their session on or before September 15, 1996. Papers not available to the discussant and chair may be eliminated from the program at the discretion of the session chair.
7. Presenters must provide complete copies of their papers or detailed handouts to attendees at their sessions.
8. Overhead projectors and screens will be provided by MWERA in most rooms. Presenters who will need additional AV equipment are responsible for arranging such with the hotel and at the presenter's expense.
9. MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals. Unless expressly prohibited in writing by the author(s), summaries may also be made available to the press or other interested parties upon request. Such limited distribution does not preclude subsequent publication by the author(s).
10. Authors of accepted proposals assume the ethical and professional responsibility to appear at the Annual Meeting and to participate in their presentation or assigned session. When circumstances preclude author(s) from doing so, it is the responsibility of the author to arrange a suitable substitute and to notify the Program Chair in advance.

Session Format Descriptions

Paper Presentation: Paper sessions are intended to allow authors the opportunity to make short, relatively formal presentations in which they overview their papers to an audience. Three to five individual papers dealing with related topics are grouped into a single session of from 1-1/2 to 2 hours. The author(s) of each paper is(are) allowed approximately 15 minutes to present the highlights of the paper, and a single discussant is allowed 15 minutes to comment on the papers. Authors are expected to provide complete copies of their papers to all interested audience members.

Poster Session: Poster sessions allow extended, one-to-one interaction between authors and interested individuals. Authors of several papers are provided space in which they can display posters or other visual materials which reflect the nature of their papers for 45-50 minutes. Interested individuals are free to move from poster to poster, inquiring of or talking with authors of their choice. Authors are expected to provide complete copies of the paper on which the poster is based to all interested individuals.

Symposium: A symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. Symposium organizers are expected to identify the topic or issue, identify and ensure the participation of individual speakers who will participate, prepare any necessary materials for the symposium, and chair the session. It is suggested, though not required, that the speakers or symposium organizer will provide to interested individuals one or more papers relevant to, reflective of, or drawn from the symposium.

Roundtable Session: Roundtable sessions are intended to provide opportunities for interested individuals to participate in a dialogue with other interested individuals and the author(s) of a paper. Authors are provided a small table around which interested individuals can meet to discuss the author(s)' paper. Interested individuals are free to move into and out of these discussions as they wish. Authors are expected to make available complete copies of the paper on which the roundtable discussion was focused.

Discussion Group/Forum: These sessions are intended to allow maximum interaction between the session organizers and interested individuals on a topic or issue of debate or interest. Unlike a symposium, wherein the organizer intentionally invites individuals who represent particular points of view to speak to audience members, the discussion or forum formats are designed to provoke discussion among all participants. The organizer is expected to identify a topic or issue which is likely to be of interest and a provocative way of initiating the discussion, and to monitor or mediate the discussion.

Workshop: Workshops are intended to provide an extended period of time during which the workshop leader helps participants develop or improve their ability to perform some process (e.g., how to provide clinical supervision or appropriately use loglinear analysis). Organizers may request from 1-1/2 to 3 hours, and are responsible for providing all necessary materials for participants. Workshops typically are scheduled for Wednesday afternoon, but may be scheduled throughout the conference. Organizers may, if they wish, receive an honorarium based upon the number of participants in their workshop.

Alternative Session: The form, topics, and format of alternative sessions are limited only by the imagination and creativity of the organizer. These options are intended to afford the most effective method or approach to disseminating scholarly work of a variety of types. Proposals for alternative sessions will be evaluated on their appropriateness to the topic and audience, their suitability to meet limitations of time, space, or expense for MWERA, and the basic quality or value of the topic. The organizer of alternative sessions is responsible for identifying all major participants or speakers, developing and providing any necessary materials, and conducting or mediating the session. Because a variety of approaches may be proposed within this category, alternative session proposals should include a brief rationale for the alternative being proposed.

Guidelines for Submitting Individual Proposals

Individual proposals is used to describe any proposal intended to present a single piece of scholarship by one or more authors. The most basic example of an individual proposal would be one in which an individual scholar proposes to present a paper reporting on his or her research. This paper could be assigned to a paper session with other similar papers, a roundtable session, or a poster session. Similarly, in instances where multiple scholars have collaborated on a single work, an individual proposal would be appropriate.

The presenting or lead author of an accepted proposal must ensure that the paper is presented at the Annual Meeting. If the lead author is unable to present the paper, he or she is responsible for arranging an acceptable substitute and for contacting the Division or Program Chair as soon as possible.

Materials to be Submitted With an Individual Session Proposal

Individual Proposal Cover Sheet. (see attached). Six (6) copies with all items, including subject descriptors, completed.

Summary. Six (6) copies of a 2-3 page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8-1/2x11" paper in no smaller than 10 point type, with 1" margins. Proposals which do not meet these criteria may be refused by the Division Chair without review.

The summary should explicitly address as many of the following as appropriate, and preferably in this order: (a) objectives, goals, or purposes; (b) perspective(s) and/or theoretical framework; (c) methods and/or techniques (data source, instruments, techniques, procedures); (d) results or conclusions; and (f) educational or scientific importance of the work. Individual proposals for alternative sessions should also include a brief rationale for the proposed format.

For three copies of the summary, the heading should use the following format. In the upper left corner, type the title of the submission, author(s), and institution(s). In the upper right corner, state the name of the presenting or lead author and his or her complete mailing address (including e-mail). For the remaining three copies, only the title of the paper should appear.

Abstract. Three (3) copies of a 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. Abstracts must be type-written, single-spaced, **using 12-point Arial or Universal font.** Use clear, precise language which can be understood by readers outside your discipline. In the upper left corner, type the title of the paper, the name and institutional affiliation of each author.

Envelopes. Four (4) stamped, self-addressed, business-sized envelopes. These will be used to inform you of: (1) receipt of the proposal by the division chair; (2) the decision about your paper's acceptance; (3) your scheduled session time; and (4) additional information which you may need prior to the conference.

Index Cards. Two (2) 3x5" index cards. These should contain the following, type-written information: (a) title of the paper IN CAPS across the top; (b) the full name, institutional affiliation, complete mailing address with zip code, business telephone number, FAX number, and e-mail address for the lead or presenting author; and (c) full name and institutional affiliation of each additional author.

Guidelines for Submitting Multiple-Presenter Proposals

Multiple-presenter proposals is used to refer to proposed session formats which are organized to allow two or more presenters or speakers to address a single topic, issue, or problem. Examples of these sessions would include symposia, panel discussions, or forums, and alternative session formats meeting the above criteria. This format is not intended to allow each of several authors to address his or her contribution to a single work. Rather, the multiple presenters should reflect several perspectives, methodologies, or findings regarding the particular topic.

Organizers of multiple-presenter sessions are expected to have the consent of all presenters before submitting the proposal and to chair the session or specify another individual to do so. The organizer of accepted multiple-presenter proposals is responsible for ensuring that each person named as a participant will be present at the Annual Meeting. Should unforeseen circumstances prevent a named participant from attending, the organizer must identify a suitable replacement, notify all other presenters of the change, and inform the Division Chair or Program Chair.

Materials to be Submitted With a Multiple-Presenter Proposal

Multiple-Presenter Proposal Cover Sheet. (see attached). Six (6) copies with all items, including subject descriptors, completed.

Summary. Six (6) copies of a 2-3 page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8-1/2x11" paper in no smaller than 10 point type, with 1" margins. Proposals which do not meet these criteria may be refused by the Division Chair without review.

The summary should explicitly address as many of the following as appropriate, and preferably in this order: (a) descriptive title of the session; (b) the importance of the topic, issue, or problem; (c) names, institutional affiliations, and specific contribution or perspective to be contributed to the session by each presenter; (d) an explanation of the basic format or structure of the session and why it is relevant in light of the topic; (e) a brief explanation of the role of the chair, organizer, mediator, or discussant; and (f) anticipated audience and audience involvement.

For all copies of the summary, the heading should use the following format. In the upper left corner, type the full name, institutional affiliation, mailing address including zip code, business telephone, home or evening telephone, and e-mail address of the session organizer.

Abstract. Three (3) copies of a 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. Abstracts must be type-written, single-spaced, **using 12-point Arial or Universal font.** Use clear, precise language which can be understood by readers outside your discipline. In the upper left corner, type the title of the paper; the name, institutional affiliation, mailing address, and telephone number of the session organizer; and full name and institutional affiliation of each presenter.

Envelopes. Four (4) stamped, business-sized envelopes, preaddressed to the organizer. These will be used to inform you of: (1) receipt of the proposal by the division chair; (2) the decision about the session's acceptance; (3) the scheduled session time; and (4) additional information which may be needed prior to the conference.

Index Cards. Two (2) 3x5" index cards. These should contain the following, type-written information: (a) title of the paper IN CAPS across the top; (b) the full name, institutional affiliation, complete mailing address with zip code, business telephone number, FAX number, and e-mail address for the session organizer. If other than the session organizer, this information must also be included for the session chair, mediator, or discussant.

Guidelines for Submitting Workshop Proposals

Workshop topics should be of interest and use to a sizeable number of MWERA members. Presenters may elect to receive an honorarium based upon the number of participants attending the workshop. All persons listed as presenters are required to appear at the Annual Meeting and to conduct the workshop at the designated time. Most workshops will be held on Wednesday afternoon.

Materials to Be Submitted With a Workshop Proposal

Workshop Proposal Cover Sheet. (see attached). Six (6) copies with all applicable items, including descriptors, completed.

Summary. Six (6) copies of a 2-3 page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8-1/2x11" paper in no smaller than 10 point type, with 1" margins. Proposals which do not meet these criteria may be refused by the Workshop Chair without review.

The summary should explicitly address as many of the following as appropriate, and preferably in this order: (a) descriptive title of the workshop; (b) objectives, goals, purposes of the workshop; (c) names, institutional affiliations, and specific contributions of each workshop leader; (d) the importance or value of the workshop for participants and a statement about the likely attraction of the workshop for participants; (e) methods, techniques, or approaches to instruction (especially how participants will be allowed to apply what they learn); and (f) a brief description of the presenter(s)' relevant experience.

For all copies, the heading of the 2-3 page summary should use the following format. In the upper left corner, type the full name, institutional affiliation, mailing address including zip code, business telephone, home or evening telephone, and e-mail address of each workshop leader or presenter.

Abstract. Three (3) copies of a 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. Abstracts must be type-written, single-spaced, **using 12-point Arial or Universal font.**

BEST COPY AVAILABLE

Use clear, precise language which can be understood by readers outside your discipline. In the upper left corner, type the title of the workshop, the name and institutional affiliation of the workshop organizer(s).
Envelopes. Four (4) stamped, business-sized envelopes, preaddressed to the workshop organizer for: (1) acknowledgement of receipt of the proposal by the Workshop Chair; (2) notification of the acceptance of the workshop proposal; (3) scheduled workshop time; and (4) additional information which may be needed prior to the conference.
Index Cards. Two (2) 3x5" index cards, typed in the following format: (a) title of the workshop IN CAPS across the top; (b) full name of organizer followed on subsequent lines by his or her complete mailing address with zip code, business and home telephone numbers with area code, FAX number, and e-mail address.

Workshop proposals should be submitted to Dr. Mary Ann Wham, College of Education, University of Wisconsin-Whitewater, 800 West Main Street, Whitewater, Wisconsin 53190.

Where To Submit Proposals

Proposals should be submitted to the Chair of the division listed below with which it is most closely aligned. **Proposals may be submitted to only one division.** Division Chairpersons hold the right to forward proposals which they believe might best be suited to another division to the appropriate Division Chair. Questions about the appropriateness of proposals for particular divisions should be directed to the Division Chairs.

For consideration, complete proposal materials must be received by the Division Chair not later than April 1, 1996.

Division A: Administration and Leadership

This division is concerned with research, theory, development, and the improvement of practice in the organization and administration of education.

Larry McNeil
Department of Educational Administration & Foundations
Illinois State University
Degalmo Hall, Room 331
Normal, Illinois 61790-5900
(309) 438-5155
@ILSTU.EDU.LMCEA

Division B: Curriculum Studies

This division is concerned with curriculum and instructional practice, theory, and research.

Jay C. Thompson, Jr.
Department of Educational Leadership
TC915
Ball State University
Muncie, Indiana 47306-0590
(317) 285-5350

Division C: Learning and Instruction

This division is concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors.

Stephen L. Benton
Department of Counseling & Educational Psychology
369 Bluemont Hall
Kansas State University
Manhattan, Kansas 66506
(913) 532-5784
LEROY@KSUVM.KSU.EDU

Division D: Measurement and Research Methodology

This division is concerned with measurement, statistical methods, and research design applied to educational research.

Thomas S. Parish
Professor and Assistant to the Dean
College of Education
Kansas State University
447 Bluemont Hall
Manhattan, Kansas 66506
(913) 532-5537
TPARISH@KSUVM.KSU.EDU

Division E: Counseling and Development

This division is concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies.

Eddie E. Glenn
Illinois State University
P.O. Box 733
Normal, Illinois 61761
(309) 438-7884

Division F: History and Philosophy

This division is concerned with the findings and methodologies of historical research in education.

Louise E. Fleming
Ashland University
313 Bbder Hall
Ashland, Ohio 44805
(419) 289-5347

Division G: Social Context of Education

This division is concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development, especially multicultural perspectives.

Ciara New
University of Wisconsin - Parkside
900 Wood Road, Box 2000
Kenosha, Wisconsin 53141-2000
(414) 595-2015
NEW@CSUWP.EDU

Division H: School Evaluation and Program Development

This division is concerned with research and evaluation to improve school practice, including program planning and implementation.

John W. Fraas
220 Andrews Hall
Ashland University
Ashland, Ohio 44805
(419) 289-5930
JFRAAS@ASHLAND.EDU

Division I: Education in the Professions

This division is concerned with educational practice, research, and evaluation in the professions (e.g., medicine, nursing, public health, business, law, and engineering).

Richard M. Smith
RFI/Marian Joy Rehabilitation Hospital
P.O. Box 675
Wheaton, Illinois 60187
(708) 462-4102

Division J: Postsecondary Education

This division is concerned with a broad range of issues related to two-year, four-year, and graduate education.

Gloria T. Sandoval
28 Alondra Road
Santa Fe, New Mexico 87505
(505) 466-4432

Division K: Teaching and Teacher Education

This division is concerned with theory, practice, and research related to teaching at all levels and in-service and preservice teacher education, including field experience supervision and mentoring.

Carmen R. Giebelhaus
University of Dayton
221F Chaminade Hall
300 College Park
Dayton, Ohio 45469-0525
(513) 229-3305

Workshops

Mary Ann Wham
College of Education
University of Wisconsin - Whitewater
800 W. Main Street
Whitewater, Wisconsin 53190
(414) 472-5377
WHAMM@UWWVAX.UWW.EDU

Exhibits

MWERA welcomes individuals and companies who wish to display commercially available products, materials, or services which may be of interest to our members. Such displays often include current publications, software, instructional materials, media, or consulting services. Individuals who wish to participate in these exhibits are encouraged to contact the Assistant Program Chair for Exhibits:

Sharon McNeely
Northeast Illinois State University
P.O. Box 34421
Chicago, Illinois 60634
(312) 794-2788

For Additional Information

Additional information can be obtained by contacting the 1996 Program Chair:

Kim K. Metcalf
Teacher Education Laboratory
School of Education
Indiana University
Bloomington, Indiana 47405
(812) 856-8123
KMETCALF@UCS.INDIANA.EDU

INDIVIDUAL PROPOSAL COVER SHEET

(Paper/Poster/Roundtable and Alternative Sessions)

(Please type)

1. Please check the type of format you prefer for this session:

   Paper Session _____ Poster Session _____ Roundtable Session _____

   Alternative Format (please describe): _____

2. Title of Submission _____

   _____

3. Name of first or lead author: _____
   Last Name First Name M.I.

   Affiliation: _____ Telephone: (____) _____

   Mailing Address: _____

   _____

   FAX Number : (____) _____ Complete e-mail address: _____

4. List any co-authors including full names, institutional affiliations, and telephone numbers. Circle the names of all authors who are graduate students. (Please note: only first or lead authors will be scheduled to avoid conflicts).

5. Are you a member of MWERA? Yes ____ No ____

6. Subject Descriptors: Indicate 3 one- or two-word descriptors for this submission.

   (1) _____ (2) _____ (3) _____

7. I hereby certify that this proposal has not been previously published nor has it been submitted to any other Division in MWERA. I further certify that, if this paper is accepted for the 1996 Annual Meeting, I will register for the conference, appear, and deliver the presentation at the assigned time and date.

   _____ _____
   Signature Date

Be certain to enclose all of the following with your proposal:

SIX SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH OF THE FOLLOWING:

- Individual Proposal Cover Sheet
- 2 to 3 page summary (3 copies blind; 3 with author information)

PLUS:

- Three copies - 100-150 word narrative abstract in 12-point Arial or Universal font
- Four self-addressed, stamped, business-sized envelopes
- Two 3x5" index cards with information noted in "Guidelines for Submitting Individual Proposals"

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY APRIL 1, 1996

MULTIPLE-PRESENTER PROPOSAL COVER SHEET

(Symposia/Forums/Panel Discussions and Alternative Sessions)

(Please type)

1. Please check the type of format you prefer for this session:

   Symposium _____ Forum _____ Panel Discussion _____

   Alternative Format (please describe): _____

2. Please indicate the approximate amount of time you would prefer for this session (Please note: the exact time allotted to each session will be determined by the Division and/or Program Chair):

   45 minutes _____ 90 minutes _____ Other (please specify) _____

2. Title of Submission _____

   _____

3. Organizer's Name: _____
   Last Name First Name M.I.

   Affiliation: _____ Telephone: (____) _____

   Mailing Address: _____

   _____

   FAX Number : (____) _____ Complete e-mail address: _____

4. Attach a separate sheet which lists all presenters including full names, institutional affiliations, telephone numbers, and TITLE or topic which each will address. Circle the names of all presenters who are graduate students.

5. Are you a member of MWERA? Yes ____ No ____

6. Subject Descriptors: Indicate 3 one- or two-word descriptors for this submission.

   (1) _____ (2) _____ (3) _____

7. I hereby certify that this proposal has not been previously published nor has it been submitted to any other Division in MWERA. I further certify that, if this paper is accepted for the 1996 Annual Meeting, I will register for the conference, appear, and ensure the delivery of the presentation at the assigned time and date.

   _____ _____
   Signature Date

Be certain to enclose all of the following with your proposal:

SIX SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH OF THE FOLLOWING:

- Multiple-Presenter Proposal Cover Sheet
- 2 to 3 page summary (all with author information)

PLUS:

- Three copies - 100-150 word narrative abstract in 12-point Arial or Universal font
- Four self-addressed, stamped, business-sized envelopes
- Two 3x5" index cards with information noted in "Guidelines for Submitting Multiple Presenter Proposals"

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY APRIL 1, 1996

WORKSHOP PROPOSAL COVER SHEET

(To be submitted to the Workshop Chair)

(Please type)

1. Please indicate the approximate amount of time you would prefer for this workshop (Please note: the exact time allotted to each workshop will be determined by the Workshop and/or Program Chair):

   45 minutes _____ 90 minutes _____ Other (please specify) _____

2. Descriptive Title of Workshop _____

   _____

3. Organizer's Name: _____
   Last Name First Name M.I.

   Affiliation: _____ Telephone: (____) _____

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4. List all workshop presenters or instructors including full names, institutional affiliations, telephone numbers, and aspect which each will address. Circle the names of all presenters who are graduate students.

5. Are you a member of MWERA? Yes ____ No ____

6. I hereby certify that this workshop has not been previously presented within any other Division in MWERA. I further certify that, if this workshop is accepted for the 1996 Annual Meeting, I will register for the conference, appear, and ensure the delivery of the presentation at the assigned time and date.

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   Signature Date

Be certain to enclose all of the following with your proposal:

SIX SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH OF THE FOLLOWING:

- Workshop Proposal Cover Sheet
- 2 to 3 page summary (all with workshop leader or organizer information)

PLUS:

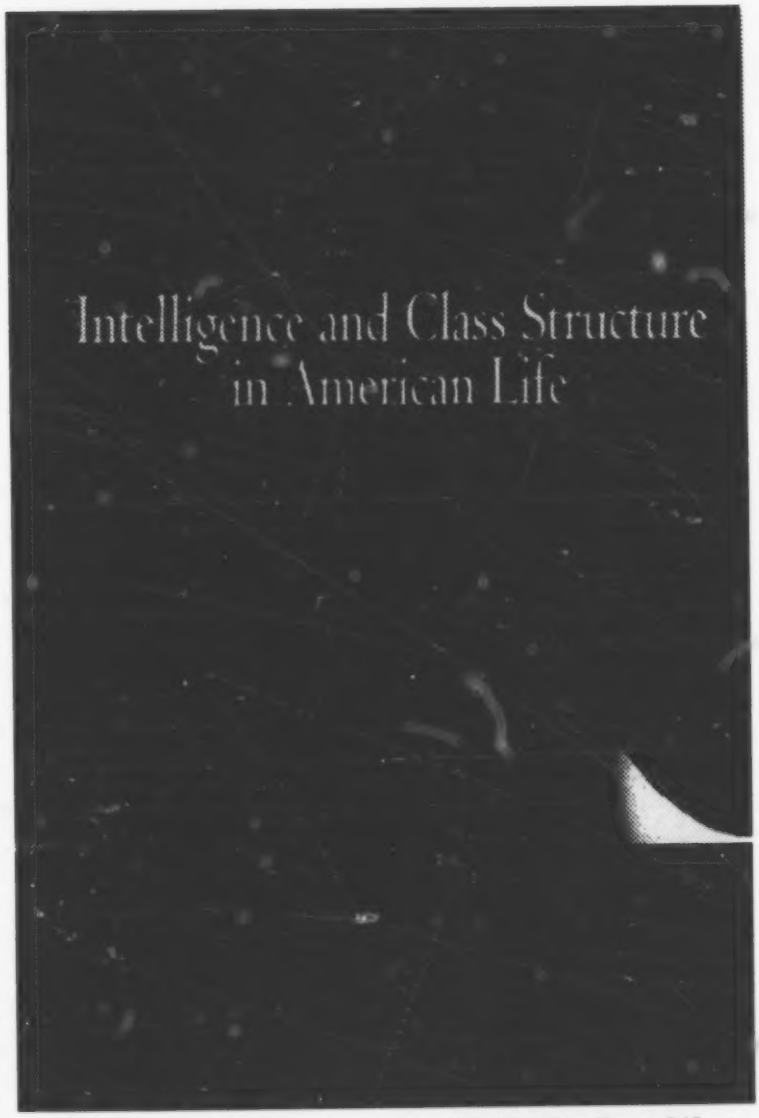
- Three copies - 100-150 word narrative abstract in 12-point Arial or Universal font
- Four self-addressed, stamped, business-sized envelopes
- Two 3x5" index cards with information noted in "Guidelines for Submitting Workshop Proposals"

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY APRIL 1, 1996

SPECIAL SECTION

Reviews of the Book: The Bell Curve

Section Editor: Dennis W. Leitner[1], Southern Illinois University



NY: The Free Press, 845 pp.

This controversial book (an understatement, to be sure!) *The Bell Curve : Intelligence and Class Structure in American Life* (hereafter referred to as TBC) by Richard J. Herrnstein and Charles Murray (denoted H&M) is one of the most important books published within the last 18 months. This issue of MWER brings together contributions from several sources, with the intent of presenting comment from all sides of the issue in the shape of a bell curve. . . . balanced around a central base of ideas.

The purpose of this effort is not to persuade you of the validity of one side or the other. If you haven't yet taken a position about the book (an event which has a probability close to zero), you might find some information or sources herein that interest you and may help you to come to a position, if you so desire.

We have assembled contributions from many sources. Lyle White has created an annotated bibliography of many of the published reviews of TBC. While this bibliography is certainly not exhaustive, it represents a wide spectrum of views.

Tom Knapp has focused his unique evaluation on the statistical analyses in the book, most of which are discussed in the appendices. We know of no other reviews of the appendices of TBC.

Mary Sudzina has contributed comments from Part II of her interview with John Goodlad, a continuation of a broader interview, Part 1 of which appeared in the Spring 1995 issue of *MWER*.

[1] I wish to thank Ayres D'Costa, Mary Sudzina, Marlene Schommer and Joel Levin for helping greatly with identifying and soliciting these contributions.

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Marlene Schommer focuses her very popular *MWER* column *Voices in Education* on TBC. Education experts voice their professional opinions on the book, its findings, and its relevance for educators.

Why is this book so controversial? It has been argued that many of the critics of TBC haven't read it - or at least not all of it. Could it be that it is too difficult to read? The authors mention in 'A Note to the Reader' that this 845-page book can be read at several levels. Reading only each chapter's opening precis, which is written informally and free of technical terms, shortens the book to about 30 pages. You could then proceed to read the many boxed inserts of relevant and interesting (but not necessary) topics for thought. The technically minded would want to move into the appendices which provide explanation of statistics, data analysis and other key information.

But another avenue would be to read the enclosed summary of TBC originally written by J. Laurie Snell for *Chance News*, which is an electronic publication available on the *World Wide Web* at http://www.geom.umn.edu/locate/chance. The summary starts with *Chance News* 3.14: (22 September) and continues, along with related comments and stories, for several subsequent issues to 15 October, 1994.

In order to clarify the notions of the 'heritability' of intelligence, Lizabeth and David DiLalla, developmental psychologists specializing in behavioral genetics at Southern Illinois University's School of Medicine and Department of Psychology, have written for us a layman's discussion of 'heritability.'

In addition, I have tried to summarize the Black perspective on TBC by creating an annotated bibliography of the articles in the Winter 1995 issue of *The Black Scholar*. Included is a discussion of the statistical considerations in TBC from *Chance*, a magazine of the American Statistical Association (not to be confused with J. Laurie Snell's *Chance News*).

One possible criticism of this Review of Reviews may be that it is late - after all, the book was published in October, 1994. However, new reviews continue to appear: A recent Feature Review of TBC by Robert J. Sternberg appears in the September 1995 issue of *Psychological Science*. And I'm sure others will appear after this issue of *MWER*. A thorough statistical analysis and reanalysis of H&M's data is expected to appear in the *Journal of the American Statistical Association*. Both AERA and NCME have planned sessions on TBC for their annual conferences in NYC in 1996.

While this effort has been exhausting to me, it certainly is not exhaustive. The ideas and perspectives of many other authors in many other forums could have been included. But in the true sense of a statistician, this was meant to be a sampling of opinions. I'll leave it to the reader to judge if it is a representative sampling of those opinions, while granting that it is not a random sampling.

ANNOUNCEMENT

Educational Research Home Page on the Web

An unofficial Home Page for educational research is available on the World Wide Web:

http://bsuvc/bsu.edu/~00gjmarchant/edresearch.html

An Annotated Bibliography of Reviews of The Bell Curve

Lyle J. White, Southern Illinois University

Individual Reviews in Professional Journals and Popular Press

Ducharme, E. R., & Ducharme, M. K. (Eds.). (1995, January-February). The Herrnstein and Murray book: A controversy. [Interview with Nancy Cole, President, Educational Testing Service] *Journal of Teacher Education*, 4, 6, (1), 7-9.

Cole found this book "very worrisome" in that it presents false issues about education, and misuses test data to provide proof of inherited intelligence. She noted that many interpretative issues were not addressed in a careful and scientific way, and that the data presented seemed chosen to emphasize racial differences. She continued by noting that the views presented in the book will likely harden the views of those who already hold negative views about human possibilities.

Miele, F. (1995). Interview with Robert Sternberg on *The Bell Curve*. *Skeptic* (3)3, 72-80.

Robert Sternberg, author of *A Triarchic Theory of Intelligence* and Yale professor, began this interview by noting that although many psychometricians may agree on a theory or a state of affairs (see *The Wall Street Journal* article reviewed here), it does not lead to the implication of truth. He noted that even if heritability of intelligence is fairly high (he suggested about .5), it does not mean that intelligence cannot be modified. Nor does it explain differences in group means. The authors often invite the reader to make generalizations (e.g., race differences are due to genetics) even though no evidence is provided. He cited several instances where Herrnstein and Murray misrepresented and misinterpreted data (e.g., drawing causal inferences from correlation data and the use of the National Longitudinal Study of Youth which was not particularly representative of the United States population). He also noted the conceptual inconsistencies in the authors noting the *Flynn Effect* (i.e., IQs are generally going up) and why they believe IQs are going down. Sternberg also discussed his theory of intelligence and how it is more useful in discussing societal issues than the more limited model proposed by Herrnstein and Murray.

Gardner, H. (1994, Winter). Cracking Open the IQ Box. *The American Prospect*, 73-75.

Howard Gardner, professor of education at Harvard University and author of *Multiple Intelligences*, acknowledged the importance of this book, the clarity of the arguments, and the reasonableness of some of the analysis. Nevertheless he found many faults with *The Bell Curve*, most disturbingly the stylistic manner. Gardner characterized this style in numerous ways, including: "special pleading, based on biased reading of the data," "scholarly brinkmanship" (i.e., taking readers up to a position of extremism and then backing away from it at the last moment, leaving readers to continue on their own without the author acknowledging this intention), "ungenerous," "rhetorical bomb-throwing," and "smug self-satisfaction."

Gould, S. J. (1994, November 26). Curveball [Review of the Book *The Bell Curve*]. *The New Yorker*, 139-149.

Author of *The Mismeasure of Man* and Harvard University Zoology professor, Stephen Jay Gould began his trenchant review by speculating on the causes that have led to the popularity of *The Bell Curve*. He concluded that we are living in "...a historical moment of unprecedented ungenerosity, when a mood for slashing social programs can be powerfully abetted by an argument that beneficiaries cannot be helped" (p. 139). Gould continued his critique by questioning the validity of the four premises on which Herrnstein and Murray base their general claim that intelligence is the major determinant in social standing, that is, intelligence must be: depictable as a single number, capable of ranking people in linear order, genetically based, and effectively immutable. Gould also incorporated an article in *The New Republic* (1994, October 31) written by Murray and Herrnstein to support his charge of their disingenuousness in choice of methods, presentation, and conclusions.

Kamin, L. J. (1995, February). Behind the Curve [Review of the book *The Bell Curve*]. *Scientific American*, 99-103.

In this review, Leon Kamin, professor of psychology at Northeastern University, and author of *Science and politics of IQ*, criticized the quality of evidence used by Herrnstein and Murray, as well as the social policy they advocated. Kamin argued that the evidence cited in *The Bell Curve* is troubling because much of it is gleaned from second-hand sources that, once examined closely, is faulty and is directed by preconceived notions about race and intelligence. Kamin also argued that too often Herrnstein and Murray used correlation statistics to reason causal relations. On the final issue, the social policy, Kamin continued the theme that Herrnstein's and Murray's preconceived notions (e.g., affirmative action is an unwise and destructive policy) directed their selection and interpretation of data.

Kamin concluded the review by declaring. "The book has nothing to do with science" (p. 103).

Robinson, D. N. (1994/1995, Winter). Hereditary Monarch in the Republic of Virtue [Review of the book. *The Bell Curve*]. *Journal of Blacks in Higher Education*, 117-122.

Daniel Robinson, author and professor of psychology at Georgetown University, found the discussion on the relation between heritability and environmental factors in *The Bell Curve* lacking in rigor and conceptual sophistication. Robinson also questioned the ease and "smugness" with which Herrnstein and Murray treat psychological data, "as if they were gradations on a ruler" (p. 120) [i.e., ratio numbers] and the relative unimportance the authors attached to three findings. The first important finding that Robinson found relatively ignored by Herrnstein and Murray was that when sampling blacks and whites with the same average IQs, one is twice as likely to finds blacks in poverty, five times more likely to be born out of wedlock, about three times more likely to have been on welfare, more than twice as likely to have lived in poverty during the first three years of life, and more than twice as likely to give birth to a low birth-weight child. Second, white mothers classified as dull are as likely to have children with severe behavior problems as are white mothers classified as very bright. Third, although 88 percent of the women receiving welfare for at least five years are within the bottom half of the IQ distribution, 3 to 4 percent of them are within the 116-126 range. Robinson concluded his review by calling on America to refocus its energy on questions regarding the moral center around which each life can be organized.

Series of Reviews in a Magazine

The Bell Curve: A Symposium. (1994, December 5). *National Review*, 32-61. John O'Sullivan, Editor

Barone, M. *Common Knowledge*, 32, 34.

Michael Barone, a senior writer at *U. S. News & World Report*, suggested that the message of *The Bell Curve* is already widely understood by most Americans, that is, "...the differences in average intelligence among the races do not justify discrimination against or for individuals of those races (p.32) and that "....the disproportionately low number of blacks in top positions and the disproportionately high number of blacks in prison....do not result from racial discrimination" (p. 34). For Barone these arguments are further evidence against "Left" political polices of required racial preferences, radical social engineering, or economic redistribution.

Shipman, P. *Legacy of racism*, 34, 36, 38)

As a paleoanthropologist, Pat Shipman congratulated Herrnstein and Murray for their "heroic" attempt at an honest and clear explication of a complex topic to the general public. Shipman also noted that Herrnstein and Murray should have examined further the potential effects of prejudice on IQ.

Van Den Haag, E. *Not hopeless*, (38, 40)

Ernest Van Den Haag, a psychoanalyst, supported the arguments within *The Bell Curve* that intelligence predicts outcomes better than parental privilege. Nevertheless, he was critical of Herrnstein's and Murray's implied socio-economic hopelessness regarding "low-IQ" individuals and their failure to note that in some sub-cultures (e.g., high school) intelligence holds less prestige than other factors.

Neuhaus, R. J. *Going Public*, 40, 42

Priest, journal editor, and Richard John Neuhaus, friend of Charles Murray, criticized Herrnstein and Murray for interjecting the argument that intellectual ability varies among races (if the allegation is true, little or nothing can be done about it) into this book and into the debate over social policies such as affirmative action and immigration practices. Neuhaus submitted that these polices can be debated honestly, and perhaps more cogently, without the IQ factor. Neuhaus concluded his review with a caution for his fellow conservatives, "...To think that it is to their advantage to seize upon the racial factor in *The Bell Curve* would be very dumb. It would also be very, very wrong" (p. 42).

Genovese, E. D. *Living with Inequality*, 44, 46.

Describing *The Bell Curve* as thoughtful, challenging, and deeply flawed book, author Eugene Genovese commended the book for its analysis of the transformation of the American elite, and its proposals for reforms. He condemned the authors, however, for their preoccupation in their analyses of racial differences, a category they initially stated did not exist. Furthermore, he pronounced Herrnstein and Murray naive, if not disingenuous, in their belief that calling attention to racial differences between blacks and whites can somehow reduce racial prejudice.

Wilson, J. Q. *Acting Smart*, 46-48

James Wilson, a management and public policy professor, emphasized that believing in nurture does not necessarily make change more likely or easier; nurture as well as nature factors are hard to change. He also joined other reviewers in noting the unfortunate likelihood than many, liberals and conservatives alike, will pay more attention to the race issues than to the other "penetrating" qualities of the book.

Jensen, A. R. *Paroxysms of Denial*, 48-50

Arthur Jensen, Professor Emeritus of Educational Psychology at the University of California, Berkeley, is well known to scholars and professionals who have studied theories of intelligence and how intelligence is related to other human traits. Consequently, it should be no surprise that he found the essential facts presented in *The Bell Curve* to be correct. Because other scholars hold dissimilar views, Jensen proposed that an appropriate course of action would be for President Clinton to ask the National Academy of Sciences to appoint a panel of experts to evaluate the factual claims of *The Bell Curve* and report its conclusions to the public,

much like the process that was initiated after Jensen's publication of *Bias in Mental Testing*. Only in this way, argued Jensen, could the public debate over this book proceed from questions regarding the validity of the facts to the more important questions related to public policy and the nation's future.

Glazer, N. *Is Intelligence Fixed?*, 50-52

Nathan Glazer, author and professor emeritus of education and sociology at Harvard University, found the discussion of differences of intelligence among groups, defined by a common inheritance and culture, too brief in *The Bell Curve*, especially in the area of environmental factors that have explanation possibilities. He took further issue with Herrnstein and Murray on three related issues: (a) How fixed are the differences? (b) Can test performances of low performing groups be raised? (c) How can a country that "has struggled so long, and still struggles to make blacks full and equal participants" (p. 52) not support a public policy, such as affirmative action, that promotes group representation.

Lomasky, L. E. *Meritocracy That Works*, 52-53

Loren Lomasky, professor of philosophy at Bowling Green State University, used the National Basketball Association, as an example of a meritocracy that works, to support and clarify his arguments for the acceptance for a more generalized societal meritocracy.

Young, M. *Moral Intelligence*, 53-54

Michael Young is an English nobleman and the author who coined the term "meritocracy" forty years ago. In his review, he challenged the authors, and the rest of America, to consider the place of a "moral intelligence" in modern life. He suggested that the moral leadership in this country has "...deteriorated as leadership has been more and more restricted to people with a particular kind of cognitive ability" (p. 54). He further challenged the authors (i.e., Murray) and all Americans to consider remedies beyond the "time-honored maxim that the Federal Government should get off people's backs" (p. 54) and to look more closely at the relations between social and geographical mobility and traditions of community and family morality.

Berger, B. *Methodological Fetishism*, 54-56.

From her position as a professor of sociology at Boston University, Brigitte Berger reviewed *The Bell Curve* and found it to be "narrow and deeply flawed." The limitations of the book and its argument, she noted, is based on the assumption that "empirically measured differences among racial groups reflect 'intelligence'" (p. 55). She proposed instead that measured intelligence is more an assessment of "modern consciousness," a term she used to describe skills that "...are particularly relevant to operating in the highly specialized worlds of modern technology and rationalistically organized bureaucracies" (p. 55). These skills she believes can be learned.

Loury, G. C. *Dispirited*, 56-58.

Glenn Loury, a professor of economics at Boston University, questioned Herrnstein's and Murray's on several points, including their willingness to develop causal relations in a field (i.e., social science) where understanding of causality "..is so limited, and the importance of matters of the spirit so palpable" (p. 58). He also questioned the authors' suggestion that as a country we accommodate ourselves to the inevitability of the differences between groups in cognitive skills.

Novak, M. *Sins of the Cognitive Elite*, 58-60.

Michael Novak holds an endowed chair in Religion and Public Policy at the American Enterprise Institute. He concentrated his review on two theses he found important but largely ignored in the book: the twin hazards of having either above-average or below-average intelligence. For the cognitive elite, the physical isolation and hubris of these groups tends to distort its vision and sense of reality. For those in the low intelligence group, making moral decisions in a complex ambiguous society can be especially problematic as "those with fewer chances in life have much more to lose with every chance they bobble" (p. 61).

Seligman, D. *Trashing the Bell Curve*. 60-61.

Columnist Daniel Seligman suggested that much of the criticism of *The Bell Curve* is unfounded and the result of the liberal media attempts to suppress the ideas contained therein.

The New Republic (1994, October 24). Andrew Sullivan, Editor

In this special section, 19 brief responses to *The Bell Curve* were written by editors and reporters of *The New Republic* and *Harper's*, academicians Henry Louis Gates, Jr., Andrew Hacker, Randall Kennedy, Glenn Loury, and Richard Nisbett, and authors Nathan Glazer, Hugh Pearson, and Alan Wolfe. These articles, many in expanded form, are contained within *The Bell Curve Wars* (Fraser, 1995) and reviewed below. In addition, this issue contained an essay by Charles Murray and Richard J. Herrnstein, "Race, Genes and I.Q.—An Apologia" where they summarized portions of *The Bell Curve* and presented a case for conservative multiculturalism.

Newsweek, (1994, October 24). Maynard Parker, Editor

Morganthau, T. *IQ: Is it destiny?* pp. 53-55.

Tom Morganthau summarized the book in terms of three basic arguments: 1) A reinterpretation of social class, 2) The role of intelligence in explaining other social phenomena, and 3) Racial differences are genetically based. Morganthau called into question the relation between IQ and intelligence, and the apparent contradictions contained within the book (e.g., citing a reference that reported IQ gains in society over time and then arguing for a national dysgenesis). As a way of illustrating the variety of IQ in successful and celebrated personalities, they list names and

report (no references given) IQs, including a score of 228, and placed on a normal distribution curve. Readers should keep in mind that such illustrations are of questionable utility without citation, especially when the reported scores exceed those that are maximally attainable on modern and adequately normed intelligence tests (i.e., most have ceilings in the 150-160 range).

Cowley, G. *Testing the Science of Intelligence*. pp. 56-59.

Geoffery Cowley cited surveys of scientists and the long history of intelligence research to argue that "mainstream" psychologists support the utility of the IQ construct. As part of his justification of this position, he included an illustrative timeline of some of the major figures and developments in intelligence measurement (from Juan Huarte to Thomas Bouchard). His arguments were entangled somewhat by his misguided attempt to clarify the concept of correlation, "A correlation of .4 would tell you that 40 percent of the variation in one thing is matched by variation in another, while 60 percent of it is not" (p. 57). He added further to this entanglement by reporting (without reference) that "Muhammad Ali made the big time with an IQ of 78" (p. 57). Without access to the origins of this information such a statement is difficult to judge. Nevertheless, anyone who has heard Ali's quick wit during an interview, will find this statement difficult to accept, and given the nature of *The Bell Curve*, a rather lamentable illustration.

Reviews in a Series in a Professional Journal

Harvey, J. H. (Editor). (1995). *Contemporary Psychology*, 40 (5).

Bouchard, T. M., Jr. Breaking the Last Taboo. 415-418.

Noting that *The Bell Curve* is "superbly written and exceedingly well-documented" (p. 418), Thomas Bouchard, professor of psychology and director of the Minnesota Center for Twin and Adoption Research, commended Herrnstein and Murray for writing a book that questioned the current wisdom of liberal equality. Whereas other reviewers (c.f., Gould, 1994; Kamin, 1995) have questioned the quality of the evidence used in *The Bell Curve*, Bouchard contends that the evidence is compelling and carefully documented. Bouchard continued his support of the importance of genetic factors in social standing by citing his own twin studies as well as other genetic inheritance-ability-social status correlation studies.

Dorfman, D. D. *Soft science with a neoconservative agenda*. 418-421.

Donald Dorfman, a professor of psychology and radiology at The University of Iowa and author in the field of assessment and statistics, censured Herrnstein and Murray for their lack of scholarship. Dorfman pointed out that neither author has published, in any peer-reviewed scientific journal, an empirical study that has investigated the relation of intellectual ability and SES to the social factors discussed in the book (e.g., marriage, divorce, illegitimacy, welfare dependency, and parenting). Dorfman also critiqued Herrnstein and Murray for publishing outside their areas of professional expertise. Herrnstein, a Harvard University professor for 36 years, studied the experimental analysis of decision-making in pigeons and rats. Murray, who holds a doctorate in political science, has published most frequently in neoconservative magazines, but never about the genetic basis of intelligence and poverty in a scientific journal. Dorfman suggested that this publication record, or lack thereof, is related to the Herrnstein's and Murray's misuse of linear regression.

E. S. Shapiro, Editor; C. L. Frisby, Guest Editor (1995). *School Psychology Review*, 24.

Frisby, C. L. (a). Introduction to *The Bell Curve* commentaries. 9-11.

As the Guest Editor for this special issue, Frisby provided the readership (a) an introduction to *The Bell Curve*, (b) the special issue of this journal, which consisted of invited, non-peer-reviewed commentaries, (c) a list of popular and professional media sources where *The Bell Curve* has been previously reviewed, and (d) references to similar studies and discussions regarding intellectual ability, achievement, SES, race, and culture. In addition, Frisby outlined the four basic types of controversy in the social sciences as a context to consider this book and the reviews presented in this issue.

Frisby, C. L. (b). When facts and orthodoxy collide: *The Bell Curve* and the robustness criterion. 12-19.

In his own review, Frisby synthesized the explanations alternative to intellectual ability which have been proposed, some empirically based, others speculative, to account for the relative scholastic under-achievement of blacks compared to whites. Frisby evaluated the robustness of Herrnstein's and Murray's explanatory theory versus the alternative theories according to three criteria: (a) involves the fewest number of statements and assumptions, (b) explains the broadest range of phenomena, and (c) involves predictions that are the most accurate. Frisby concluded that Herrnstein and Murray have provided the more robust explanation, and that when "facts and orthodoxy collide, the bearer of the facts is reflexively accused of being 'elitist,' racist,' ..... and ideologically reactionary" (p. 17).

Oakland, T. *The Bell Curve*: Some implications for the discipline and the practice of School Psychology. 20-26.

In a review less impassioned than many, Oakland questioned the conclusions championed by Herrnstein and Murray because of some recent research by himself and others. Oakland began this review by discussing the nature of intelligence and aptitudes, and the limitations of correlation data to interpret relations between variables. He concluded his critique by citing some of his recent research regarding the relation between measured intelligence and reading comprehension, and the evaluation of a home-based program in the Gaza Strip as evidence that the study of the modifiability of cognitive ability be continued.

Braden, J. P. For whom the Bell tolls: Why *The Bell Curve* is important for school psychologists. 27-35.

Braden proposed that in reading *The Bell Curve*, psychologists should address four question: "(a) Is IQ really helpful? (b) Could the black—white IQ gap be genetic? (c) Could it help to know that the gap is genetic? and (d) What should educators do about all this? He, in turn, answered *Yes* to the first three, and to the last, "it is individualism (rather than egalitarianism) that provides a socially, morally, and scientifically defensible basis for educational policy" (p. 27). Braden further addressed the fourth question by interpreting the ability-grouping literature as providing support for this practice (*Note: Not all scholars agree here*) and by suggesting that "education might become skewed when schools are told to eradicate intractable differences between groups" (p. 33).

Kranzler, J. H. Commentary on some of the empirical and theoretical support for *The Bell Curve*. 36-41.

Kranzler choose to limit his review to two components of *The Bell Curve*: (a) the original empirical evidence used to demonstrate the central role of intelligence in American life and (b) Spearman's ***g***. Kranzler commended Herrnstein's and Murray's choice of the National Longitudinal Survey of Youth (NLSY), and their decision to use regression analysis as their research tool. He did, however, criticize them for their use of causal language and for their neglect of measurement error in their interpretation and discussion of their study. Kranzler's discussion of Spearman's ***g*** was both concise and supportive as a psychometric construct; nevertheless, he cautioned that policy decisions "...must be based on more than psychometrics or statistics" (p. 40).

Richardson, T. Q. The window dressing behind *The Bell Curve*. 42-44.

Richardson disputed several of Herrnstein's and Murray's basis assumptions and concluded that the authors have provided nothing more than "...scholarly window-dressing for the same old prejudice that has plagued this country since its very conception" (p. 43). For example, she noted that although the universal nature of the ***g***-factor may be present, each culture will have unique ways of assessing it. She also questioned whether Herrnstein and Murray can concurrently hold: (a) that ability is primarily a genetic inheritance and essentially immutable and (b) that increased resources ought to allocated to increase the quality of the learning environment of high ability students.

Reviews in Edited Books

Jacoby, R., & Glauberman, N. (Eds.) (1995). *The Bell Curve debate*. New York: Random House.

The editors of the book have provided an important service to scholars and students who wish to expand their reading in this area or who would appreciate having many of the important review articles regarding *The Bell Curve* compiled and easily accessible. Included in this compilation are the series of reviews that appeared in the *National Review*, and longer reviews by authors such as Stephen Jay Gould, Leon Kamin, Irving Lousi Horowitz, and Howard Gardner. In addition, the editors have included readings from previous debates regarding the nature of intelligence. Classic essays by Francis Galton, Karl Pearson, Charles Cooley, Lewis Terman, Lothrop Stoddard, Walter Lippmann, Carl Brigham, and Horace Bond are contained herein. Articles by Arthur Jensen, Leon Kamin, and other contemporary scholars complete this work. Given the scope of the readings contained within this book, it is likely that it will soon become a required text in psychology, sociology, and education courses where the nature of the intelligence, environment, and heredity are studied and debated.

Fraser, S. (1995). *The Bell Curve wars*. New York: Basic Books.

This edited book provides a supplement to the Jacoby and Glauberman text by providing expanded versions of articles that appeared in the October 31, 1994 editions of *The New Republic*. In addition to those selections, reprinted articles by Stephen Jay Gould, Howard Gardner, and Thomas Sowell are included. Original chapters by Jacqueline Jones and Orlando Patterson complete this contribution to the debate.

Related Publications

Azar, B. (1994, December). Psychology weighs in on *Bell Curve* debate. *APA Monitor*, pp. 1, 22, 23.

Staff writer Azar added to the debate surrounding the book by providing short comments from a variety of psychologists.

Gruber, H. E., et al. (1995, January). Social factors carve *The Bell Curve* [Letter to the editor]. *APA Monitor*, p. 5.

Howard Gruber and eight other faculty members of Teachers College, Columbia University, used the "Shared Perspectives" forum to call into question many of the assumptions used in *The Bell Curve* to justify certain social policies and to challenge American scientists to, "seek creative ways to rectify the social evils that afflict us" rather than to "make excuses for the failure of our society" (p. 5).

Mainstream Science on Intelligence. (1994, December 13). *The Wall Street Journal*, section A, p. 18.

In response to the attention directed by the public press toward *The Bell Curve*, and the nature of human intelligence in general, fifty college professors, including many of the most published authors in the field of intellectual measurement and theory, provided a list of 25 conclusions regarding the nature of human intelligence. The conclusions they offered, labeled as "mainstream among researchers," were grouped into six categories: The meaning and measurement of intelligence, Group differences, Practical importance, Source and stability of within-group differences, Source and stability of between-group differences, and Implications for social policy.

A statistical critique of Herrnstein & Murray's The Bell Curve

by Thomas R. Knapp, The Ohio State University

In the time since its publication about a year ago, ***The Bell Curve*** has generated a great deal more heat than light. In their attempt to study the relationship between intelligence and lots of other things, the authors have managed to offend all of the same people that Arthur Jensen offended a quarter of a century ago, and then some. I personally don't care about their results regarding who is smarter than whom. All I care about is the quality of the research methods upon which those results are based. I shall accordingly restrict myself to a review of ***the appendices*** to their book, strange as that may seem.

There are seven appendices. Appendix 1 is entitled "Statistics for people who are sure they can't learn statistics" and is one of the finest summaries of basic statistical concepts I have ever read. Their interpretation of the geometry of multiple regression is simply superb! I have only a couple of quibbles: (1) The means and standard deviations in their bogus example of heights of Olympic female gymnasts and NBA male basketball players strike me as a bit off the wall (mean of 5'1" and s.d. of 2" for the gymnasts; mean of 6'6" and s.d. of 4" for the basketball players). Since they make a big deal about normal distributions throughout the book, a six s.d. range would be from 4'7" to 5'7" for the women and from 5'6" to 7'6" for the men. Mary Lou Retton is small, but 4'7" is too tiny; so is 5'6" for an NBA player. (2) In the discussion of correlation and regression they don't say "linear" often enough, and they don't make it quite clear that you are trying to minimize the "errors" in the vertical direction. (They actually never define "error".)

The second appendix treats several technical matters regarding the National Longitudinal Survey of Youth (NLSY), from which they took the data for their book. This is a bewildering appendix in which they seem to go back and forth from preferring to not preferring weighted vs. unweighted cases, (per)centiles vs. standard scores, age-equated vs. unadjusted scoring, and truncated vs. actual distributions. The interested reader will find it difficult indeed to follow what they finally did about all of the problems that they mention. Their operationalizations of family income and socioeconomic status are particularly bizarre. After taking the logarithm of actual family income and standardizing 0,1 they cut off at -4 any income less than $1000. For parental occupation they used a decile modification of Duncan's 1-100 scale. If a student's parent(s) was(were) not in the labor force at all, they assigned a decile value of -1. They then standardized, added, and averaged four separate indicators of SES (including parental occupation) to get a total score (with a disappointingly low Cronbach's alpha of .76), which was itself further standardized. If any of the four were missing, the value assigned to the student for SES was the average of whatever indicators there were. Methinks the better approach would be to treat all four of the indicators as separate independent variables and to use listwise deletion to toss out all cases for which any indicator was missing. This would have decreased their sample size from 11,878 to 7,447, but that's still a lot of people. (An additional appendix on missing-data problems would have helped enormously.)

Appendix 3 concentrated on the Armed Forces Qualification Test (AFQT), which provided the "IQ" score. (It is not IQ in either the traditional MA/CA x 100 or the "deviation IQ score within age bracket" sense, but is closer to the latter). This appendix contains a short, but excellent, paragraph on what factor analysis is all about, but builds a slightly shaky case for "g" based upon a first factor associated with 64% of the variance ***among ten subtest scores*** (not individual items), a second factor with 13%, and a third factor with 5%. They commendably avoid here the complexities surrounding eigenvalues and eigenvectors, the scree test, etc., but why they bothered to mention "three inferred factors" is beyond me; that third factor's eigenvalue is less than 1.0 and can be of little interest. In this appendix the authors also provide a couple of examples of the logistic regressions that are the analyses of choice for much of the book. I take exception to their Prob>ChiSq columns, all of which are reported as .0000 or .00000. Surely they mean <.0001 or <.00001. One cannot have a tail probability of 0, and traditional significance tests for the regression coefficients are not very helpful in any event, since most of the sample sizes are so large that almost everything will be statistically significant even if substantively trivial. (All the more reason for using all four separate indicators of SES in the regressions; there are lots of degrees of freedom to play with.) And the model on page 590 suggests that some sort of path analysis of direct and indirect effects of Earlier IQ Score was carried out, whereas all analyses were simple, multiple, or hierarchical multiple.

The fourth and sixth appendices present the results of a whole bunch of regression analyses, with the fourth appendix replete with several .0000's and .00000's. There is a good discussion in Appendix 4 of the problems of interpreting standard errors when using case weights—but once more indicating the authors' waffling between using them or not using them—and their preference for concentrating on regression coefficients rather than R-squares. (I don't think logistic regression analyses yield defensible R-squares anyhow.) This appendix also contains a particularly unfortunate typographical error and a statistical boo-boo, both on page 594. The authors refer to "one of the smallest" R-squares as "only 0.17"; it is actually .017, as indicated in the tables that follow. And they go on to say that "the parameter...is significant beyond the .001 level". Tsk, tsk; it is statistics, i.e., parameter ***estimates***, that are or are not statistically significant. The tables in Appendix 4 and Appendix 6 are terribly confusing, mainly because of the varying sample sizes due to certain inclusion and exclusion criteria. Some of the dependent variables appear to have been artificially truncated, resulting in a loss of useful information, by running logistic regression analysis rather than traditional multiple regression analysis. For example, one of the dependent variables treated in Chapter 7 (on Unemployment, Idleness, and Injury) is "Out of the labor force for four weeks or more in 1989" (vs. not) dichotomy. Surely the ***number*** of weeks out of the labor force would be more informative.

Appendix 5 on black-white differences and Appendix 7 on affirmative action are more substantive than methodological. They are representative of the places in the book where Herrnstein and Murray have raised the hackles of their social critics, and I am not qualified to comment upon their arguments.

My final observation has to do with the title of the book, which the authors attribute to Erwin Glikes. I think it's a terrible title. Their study of intelligence and class structure is an important one, no matter how intelligence, or anything else, is distributed.

844

A Response to *The Bell Curve:* Conversation with John Goodlad

Mary R. Sudzina, The University of Dayton

John Goodlad is Professor of Education and Director of the Center for Educational Renewal at the University of Washington. He is also President of the Institute for Educational Inquiry in Seattle. A prolific writer and researcher, Goodlad has authored or co-authored over 25 books, and published over 200 articles. His most recent book is ***Educational Renewal: Better Teachers. Better Schools*** *(1994).*

MS- The recently published book, *The Bell Curve*, has caused much controversy among educators and politicians. Authors Herrnstein and Murray suggest that differences in intelligence and class structure affecting American life may have a genetic component, not easily compensated for by schooling. What are your thoughts on this issue?

JG- Well, you know this is nothing new. This is a song that appears every 20 years or so. Arthur Jensen proposed this. I think it's very unfortunate that this is being put into the conversation of the U.S. at a time when there is so much hatred going around; when there is so much separation and divisiveness. This is one more division of our people. The best answers are in Stephen Jay Gould, *The Mismeasure of Man*. He does not refute the data presented. It is the attribution that we must examine.

What reports of this kind completely ignore is that three generations of poverty will leave you in poverty. Those in the third generation of poverty inherit a deprived environment. What about all of those children of this supposed inferior gene background who, under the stimulus of jobs, income, good schooling have risen to very high places? How do you explain General Powell? How do you explain Linda Darling-Hammond? How do you explain Donald Stewart, the head of the College Board? How do you explain Franklin Thomas, the president of the Ford Foundation? How do you explain all of these people who have risen to university presidencies, and who are black?

MS- That sounds like you're making some sweeping generalizations about blacks.

JG- Given the opportunity, they succeed just as well as whites. If you have been discriminated against, and deprived of the best education, doesn't it follow that you're not going to perform as well? If you've had to rise out of slavery, rise out of poverty, then what is being inherited? The genes or the circumstances? The data don't tell us that.

What is the Number One predictor of a child's performance in school? Once upon a time it was the educational level of the father. Now it's the educational level of both parents. If the two parents are college educated, the child's chances of academic success are good. If the parents are not college graduates, chances are less. So, here we are saying that all of these folks who have had only an elementary education, and a poor one at that in a deprived community, aren't as bright as other people. It isn't that they aren't as bright, it's that they haven't learned the things that are performed on tests.

We published a book in 1990 which challenged many of these assumptions. It's called *Access To Knowledge* and was published by the College Board. It was released again in a new edition in November, 1994. It provides all kinds of counter evidence to this kind of argument.

Howard Gardner says that there are many kinds of intelligence. I wrote a piece in *Ed Week* a few years ago called "Beyond Half an Education" and I talk about all the bright well-educated people who didn't do well in school. These are the people who keep me afloat. They are the people who know how to fix the diesel engine in my boat. The only thing that got many of them through school at all was that they were good in the arts, back in the days when we had arts. These people are geniuses in what they do, but my guess is that on a standardized intelligence test they might score a 96. They are absolutely critical to our society and are very gifted in their areas of competence.

I did a little study years ago. I never published it. It had to do with a bill in California, called the Miller Unruh Bill, which provided money to schools to provide additional help in reading. But there was a condition to it, and that is, you had to have a separate class and there couldn't be more than 12 in a class. So, I went into schools and discovered that 10 or more of the 12 students in every class in every school were black. In some schools, they were the only black children in the schools. How had they gotten into this group? On the assumption that because they were black they couldn't learn? Because they were dumber? No, because it was assumed they were dumber because they were black.

That is where schools are immoral. Look at the failure rates in city schools that are mixed white and black. Black failure rates will outnumber the white from kindergarten on. Now what's that due to? That's largely because of the affluence, the support, and the educational level of the white families.

An important book on this subject was published by Yale University Press in April, 1995. It's by a man named Scott Miller and it's a blockbuster. It raises the question, "Why are black boys not doing well in school?" I suggest that you look at anthropologist John Ogbu's work at the University of California, Berkeley, and you will begin to see why.

MS- Thank you for your thoughts and contributions on this issue.

Voices in Education

Marlene Schommer, Wichita State University

Veteran leaders of education, as well as some new leaders, were directly asked by the author to respond to the following two questions. Their Reaction and Impact estimates are summarized below. The "leader" is identified at the end of the responses.

1. ***What is your Reaction to the controversial book entitled, The Bell Curve?***
2. ***Do you believe this book will have a major Impact on the field of education?***

Reaction: My initial reaction was personal embarrassment. I found myself slinking around, reading the book on the sly, and avoiding it in conversation with my colleagues. After a while, I realized that my situation actually demonstrated an embarrassment within the academy. It's a sorry commentary on intellectual freedom when a topic so obvious—namely, exploring cognitive ability in any way that is relevant to social life—is so feared and avoided. Even the reasons people give for discounting the book seem tortured. I heard someone say that the book couldn't possibly be credible because Arthur Jensen's name appeared frequently in the book's reference list. In essence, this argument says: The book shouldn't be taken seriously because it relies on recognized experts in the field of intelligence. Applying similar logic, it would appear that texts on gender differences should be rejected if David or Myra Sadker is cited.

Second, because of the popular hype associated with the book, I expected to find much ado about ethnic differences, though I found comparatively little. Much of the book was devoted to exploring interesting correlates of cognitive ability (for example, one finding was that, controlling for age, education, and SES, smarter people have fewer accidents on the job).

Finally, I was delighted that the book became a best seller. I have been concerned that the debates that occur in psychometric journals are too often arcane and irrelevant to educational policy and practice. *The Bell Curve* addresses difficult issues in a way that is accessible to a diverse readership and, as far I can tell, does not compromise accuracy to do so. In fact, the first Appendix (called "Statistics for people who are sure they can't learn Statistics) is one of the clearest introductory treatments of distributions, dispersion, correlation, and regression that I have seen.

Impact: None. First, I suspect that the number of copies of the book purchased greatly exceeds the number of copies actually read. A great majority of Americans own Bibles too, but what does that mean? The information many people get about the book will be second-hand; they will probably inaccurately conclude that the book is all about race.

The book's authors conclude that neither current educational practice, nor any of the popular reform efforts is likely to have much impact on general cognitive ability. However, one of the book's policy recommendations that seems promising is that we find ways to ascribe more value to cognitive ability and academic success in American education. My own daughter, who made the "Quiz Bowl" team at her homogeneous, middle-class, suburban junior high school, will still not forgive me for encouraging her to try out for the team. Apparently, success at cognitive endeavors makes one an instantaneous social outcast. She tells me it's not cool to get As. One hope is that *The Bell Curve* will stimulate broader interest in promoting and enhancing cognitive ability, perhaps (though this may be too great a hope) even to the same level that students now apprehend the social pressures to promote and enhance athletic ability.

Gregory J. Cizek
The University of Toledo, Ohio

Reaction: The book appears to be most controversial among those who have not read it or who do not understand the multiple regression methodology used. The book is an excellent summation of a particular field of educational research and a rigorous analysis of existing data. Indeed, the book should more accurately be called, "A thorough analysis of the National Longitudinal Survey of Youth" (a less compelling title, to be sure). In my view, the main legitimate critique of the book's conceptual basis has been egregiously overlooked by half-cocked critics and columnists. Not quite a "fatal flaw," but a concern is that the "ability" measure used is much more of a narrow aptitude/academic achievement measure than it is a broad ability measure. Indeed, the ability measure employed is much closer to a SAT in content than to a more general ability measure (e.g., matrices-type tests). While it is conceivable that similar results could have been found with a broader-based, more culturally-fair measure of ability, this is an overall concern that deserves more attention.

In Appendix 3 of the book the measure of ability is explained at length. The four subtests making up the ability measure are Word Knowledge (a vocabulary test), Paragraph Comprehension (a reading comprehension test), Arithmetic Reasoning (a problem-solving test using math fundamentals) and Mathematics Knowledge (a basic math test). These tests are highly g-loaded, but certainly could be criticized as being mere measures of academic achievement. This is particularly interesting in that the book fingers low cognitive ability as the main culprit in creating problems in society, as opposed to lack of education. This important fact seems to have been totally

overlooked in nonscientific knee-jerk media criticism (such as columnist Carl Rowan, who, in his reaction called testing a "pseudo-science," which causes one to wonder where exactly column-writing is on the scientific continuum).

Also of concern, the authors point out that ability consistently predicts above and beyond SES (while SES never predicts above and beyond ability). The authors use this in support of the importance of cognitive ability. Yet, this result could entirely be due to the unreliability of the SES measure, rather than due to ability being a better predictor.

My two criticisms aside, it is important to point out that the authors are willing to investigate a legitimate research hypothesis. Competing hypotheses are also proposed by the authors. Scientific method allows for these hypotheses to be studied, and for support to fall where it may. Interestingly, it seems that less support is needed for a hypothesis in line with current political opinion than for one that the authors propose. Overall, the work is exceptionally rigorous and much more temperate in tone than the media would lead us to believe.

Impact: If the book has an impact in education, it will be to further conceptualize educational research with large databases, rather than to shape public opinion (I do not think research has ever been a strong factor in shaping public belief).

Brian Stone
Wichita State University

Reaction and Impact: *The Bell Curve* rings hollow for a number of reasons. First, the book repeatedly confuses correlation with causation, a mistake that even first-year statistics students learn not to make. The fact that there is a correlation between IQ and a number of variables says nothing about the cause of this correlation. Certainly it does not imply that low IQ causes the correlation.

Second, there is good reason to believe that the correlation is otherwise caused. In our society, we require high scores on IQ-like tests to enter higher education—not just college, but graduate and professional schools as well. Someone who does not test well is likely to be denied access to routes to high-paying, prestigious careers. Thus, we create a correlation between IQ and career and other forms of socio-economic success. These correlations do not simply exist in nature. In the past, we selected on other things (e.g., parental income). We need to distinguish between the products of a social system and its causes, namely, our decisions regarding what we value.

Third, even the statistical associations reported in the book are very weak. You have to turn to Appendix IV of the book to discover that most of the coefficients of determination (squared correlations) on which the inferences are based are less than 0.1. In other words, the authors draw causal arguments on the basis of less than 10% explained variance!

Finally, the book will have little effect on educational policy because the policy recommendations in the book have nothing to do with the data. One could not come to any educational policy recommendations at all on the basis of these data, and one would hope that our society would prefer more humane rather than less humane ones if we want to produce the very best in our next generation of children.

Robert J. Sternberg
Yale University

Reaction and Impact: The science in *The Bell Curve* is more like special pleading, based on a biased reading of the data, than a carefully balanced assessment of current knowledge.

They report that efforts to raise intelligence have been programs of affirmative action or other ameliorative measures at school or in the workplace. Their ultimate solution, such as it is, is the resurrection of a world they attribute to the Founding Fathers. These wise men acknowledged large differences in human abilities and did not try artificially to bring about equality of results; instead, Herrnstein and Murray tell us, they promoted a society in which each individual had his or her place in a local neighborhood and was accordingly valued as a human being with dignity.

Yet I became increasingly disturbed as I read and reread this 800-page work. I gradually realized I was encountering a style of thought previously unknown to me: scholarly brinkmanship. Whether concerning an issue of science, policy, or rhetoric, the authors come dangerously close to embracing the most extreme positions, yet in the end shy away from doing so. Discussing scientific work on intelligence, they never quite say that intelligence is all-important and tied to one's genes; yet they signal that this is their belief and that readers ought to embrace the same conclusions. Discussing policy, they never quite say that affirmative action should be totally abandoned or that childbearing or immigration by those with low IQS should be curbed; yet they signal their sympathy for these options and intimate that readers ought to consider these possibilities. Finally, the rhetoric of the book encourages readers to identify with the IQ elite and to distance themselves from the dispossessed in what amounts to an invitation to class warfare. Scholarly brinkmanship encourages the reader to draw the strongest conclusions, while allowing the authors to disavow this intention.

Though Herrnstein deviated sharply in many particulars from his mentor B. F. Skinner, the analysis in *The Bell Curve* is Skinnerian in a fundamental sense: It is a "black box analysis." Along with most psychometricians, Herrstein and Murray convey the impression that one's intelligence simply exists as an innate fact of life--unanalyzed and unanalyzable--as if it were hidden in a black box. Inside the box there is a single number, IQ, which determines vast social consequences.

Howard Gardner
Harvard University

(Permission granted to quote from 1995, Cracking open the IQ box, *The American Prospect*, 73-75.)

What is "Heritability" and What is it Not?

Lisabeth F. DiLalla, Behavioral and Social Sciences, School of Medicine
David L. DiLalla, Department of Psychology
Southern Illinois University

Much controversy has been generated by Herrnstein and Murray's 1994 book, *The Bell Curve*. In order to critically evaluate some aspects of the research they discuss, it is important to understand the term "heritability" which is used frequently in the book as well as in much of the research literature on intelligence.

Human beings exhibit a staggering degree of physical and behavioral diversity. What accounts for these 'individual differences' among people has been at the heart of the traditional nature-nurture debate. The term "heritability" is often mistakenly employed in "yes or no" terms in both the popular and scientific press by individuals attempting to explain the origin of individual differences. It is uninformative and incorrect to simply report that a human characteristic is heritable. Rather, heritability is a statistic that provides information about the degree to which observed differences among individuals are the result of genetic differences among the individuals. Heritability (or h^2) can range from 0 to 1. Like any other statistic, heritability is specific to the sample on which it was calculated, and it should only be generalized to groups that are similar to the original sample.

Heritability is also a group statistic. It does not provide predictive information about specific individuals. For example, height is a human characteristic that has been found to have a heritability of roughly .80. This means that approximately 80% of observed differences among people with respect to height are due to the genetic differences among the individuals measured and that 20 % of the observed individual differences can be traced to the influence of environmental differences (and measurement error). A heritability of .80 does not imply that 80% of an individual's height is the result of genes with the remainder due to environment. It does imply that to the degree that the individual differs from average, 80 % of that difference is the result of genetic factors and 20% is the result of environmental factors.

The distinction between within-group and between-group level of analysis cuts to the heart of much of the controversy over *The Bell Curve*. The vast majority of studies of the heritability of IQ are based on predominantly White samples. These within-group heritability statistics cannot appropriately be interpreted as explaining the often observed mean difference in IQ between White and African American populations. Given current methodology, the heritability statistic is simply uninformative with respect to the question of what gives rise to group differences in human characteristics.

How are heritability estimates derived? Behaviors or other characteristics that can be seen or measured are called "phenotypes". Height is a phenotype; so are eye-color, heart-rate, presence or absence of a psychiatric diagnosis, marital status, and IQ. The "meaning" of phenotypes is not always clear. We can measure marital status with a high degree of accuracy, and if we conduct a twin study of marital status, we will likely find a high degree of heritability for divorce. Does this mean that there is a divorce gene somewhere on the genome? Of course not. In this case, the 'meaning' of divorce status with respect to heritability may have more to do with unmeasured characteristics such as personality traits.

In the case of IQ, there is a good deal of evidence, reviewed by Herrnstein and Murray (1994) and others (e.g., Carrol & Horn, 1981) that IQ tests measure a construct related to individuals' general cognitive abilities. Still, it must be borne in mind that just as heritability estimates are specific to samples, they are also specific to the phenotypic measure employed, and the reliability and validity of such measures should always be taken into account by consumers of research.

Observable measurable characteristics, then, are phenotypes. Our genetic make-up is our "genotype". Heritability, as noted above, is a fairly simple statistic that represents the ratio of genetic variance to phenotypic variance (Plomin, DeFries, & McClearn, 1990). A phenotype such as height is highly heritable because genetic factors play a very large role in determining individual differences in stature, whereas the environment plays a smaller, but by no means unimportant, role. A phenotype such as religious affiliation, on the other hand, shows virtually zero heritability because differences in religious affiliation are primarily dependent on the affiliation of the family one happens to grow up with. (Note that religiosity, a personality trait related to intensity of religious orientation, shows a higher degree of heritability.) Most phenotypes that we study fall somewhere in between, being determined partly by genetic make-up and partly by environmental influences. Measured intelligence, or IQ, appears to be one of these phenotypes. Research to date suggests that somewhere between 40% and 70% of the variance in intelligence can be attributed to genetic make-up, with about 30% to 60% of the variance being attributed to environmental influences and measurement error.

In studies of human characteristics, heritability can be estimated using one of several types of samples and techniques. The "twin" method involves measuring the correlation between identical twins and the correlation between fraternal twins on the behavior in question. The correlation between identical twins (the degree to which they are similar to each other) is a function of their genetic make-up (they are genetically identical) and the environmental influences that they share. These are designated as h^2 and c^2, respectively. The equation for this correlation is shown in Equation 1:

$$r_{mz} = h^2 + c^2 \qquad \text{(Eqn. 1)}$$

The correlation between fraternal twins, who share on average across a large sample approximately 50% of their genes,

is also a function of their genetic make-up and the environmental influences that they share. The equation for this correlation is shown in Equation 2:

$$r_{DZ} = 1/2(h^2) + c^2 \qquad \text{(Eqn. 2)}$$

A rough estimate of heritability can be achieved by subtracting the two equations. Thus, r_{MZ} minus r_{DZ} is equal to $1/2(h^2)$. Doubling the difference between the correlations provides an estimate of the heritability (h^2) of the characteristic under study. This estimate depends on a particular assumption, called the "equal environments assumption", that states that identical and fraternal twins share similar "trait-relevant" environments to the same extent, so that neither identical nor fraternal twins are treated more similarly to each other than the other twin type with respect to the characteristic of interest. The small amount of research that has explored this assumption has supported the applicability of the equal-environments assumption (e.g., Loehlin & Nichols, 1976; Plomin, 1986).

In 1981, a meta-analysis performed by Bouchard and McGue on 4,672 pairs of identical twins measured for intelligence showed a correlation between pair members of .86. The correlation between members of 5,546 pairs of fraternal twins was .60. Doubling the difference between these correlations yielded a broad heritability estimate of 2(.86 - .60) = 2(.26) = .52. Thus, this meta-analysis suggested that approximately half of the variance seen in measured intelligence is attributable to genetic influences and approximately half of the variance is attributable to environmental influences plus measurement error.

Theoretically, a more precise estimate of heritability could be obtained if one could take infants who were genetically identical (identical twins) and separate them at birth, raising them in very different environments. Their later measurements on an intelligence test could then be compared. If these twin pairs showed exactly the same IQ scores, then it could be assumed that intelligence is completely genetically determined. If the twin pairs showed no resemblance at all in their IQ scores, then intelligence could be said to be completely environmentally determined. To the extent that their correlations fell somewhere in between these extremes, the heritability of intelligence would also be somewhere between 100% and 0%. In this idealistic, perfect experiment, fraternal twins would not be needed for comparisons. The first problem with this design, of course, is that identical twins are very rarely separated from each other as infants, so that collecting a sample of such twins is extremely difficult and time-consuming. Also, of the identical twins who are separated from each other, they often are not separated right at birth, and they are often not placed in very different types of environments. Finally, if the prenatal environment has an important effect on later intelligence, then their environments are not completely independent. A large-scale study using this MZA (monozygotic apart) design is on-going in Minnesota (Bouchard et al., 1990) and the results are provocative, but of course the caveats mentioned above must be born in mind.

Adoption studies often are used to assess heritability. In the adoption design, two sets of correlations are obtained. First, the correlation between the adopted child and the natural parents is calculated. This correlation, assuming the child was separated from the parents at birth and raised in an unrelated environment, is a reflection of the genetic influences operating on the characteristic being measured. The second correlation is that between the adopted child and the adoptive parents. This correlation reflects the degree to which the environment has played a role in the measured characteristic. A comparison between these two correlations can provide insight into the degree to which the characteristic is heritable. If the child is much more like the natural parents than the adoptive parents, then genotype must be important for the characteristic. If, on the other hand, the child is much more similar to the adoptive parents, then the environment has been critical for shaping the characteristic.

In sum, heritability can be estimated several ways. Most importantly, if a number of estimates using a number of methods continually yields heritabilities that are comparable, then we can feel confident that these heritability estimates are fairly accurate. This is the case with studies of measured intelligence. Across a large number of studies, using various methods and statistical methodologies varying in complexity, the heritability estimate consistently falls between approximately .4 and .7. Thus, estimating intelligence as being about 50% heritable is a reasonable conclusion. We must bear in mind that this leaves about half of the variance attributable to environmental influences. This leaves plenty of room for intervention efforts designed at increasing IQ scores for certain populations of children by working with parents and schools. At the same time, it serves as a critical reminder that individuals have intellectual limits. The important thing is to assist children in reaching their highest potential by providing high-quality schooling and by intervening with families when children appear to be at risk for school failure or other negative outcomes. Heritability should not be viewed as a deterministic measure that revokes all free choice and individuality. Nor should it be invoked to explain observed mean differences in IQ between groups of people. Rather, it allows us to understand the degree to which genetic and environmental factors play an important role in shaping characteristics such as intelligence.

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My Swing at the Bell!

By Dennis W. Leitner, Southern Illinois University

After reading the book and many of the reviews, I wanted to comment on several aspects of The Bell Curve. I'd like to consider a statistical perspective, a Black Perspective, and a 'central' concluding idea.

A Statistical Perspective

An article entitled 'Wringing *The Bell Curve:* A Cautionary Tale About the Relationships Among Race, Genes and IQ' written by Bernie Devlin, Stephen E. Fienberg, Daniel P. Resnick and Kathryn Roeder appeared in the Summer, 1995 (Vol. 8, No. 3, pp. 27-36) issue of *Chance*. [The reference to a bell-shaped curve, inappropriate as it is as argued by Devlin, et al., continues to promote puns on the book's title. Some of the best/worst ones, depending on your opinion of puns, are 'Curveball' (Stephen Jay Gould), 'Alarm Bell' (Christopher Caldwell), 'Behind the Curve' (Leon J. Kamin), 'Cracked Bell', and 'For Whom *The Bell Curve* Curves' (Stanley Feingold).

The authors note that the publication of this book in October 1994, the vigorous sales of this book in the fall-spring of 1994-95, coupled with the election in November 1994 of a 'Republican majority whose political agenda was fully in sync with the Herrnstein and Murray social analysis,' (p. 27) forebodes poorly for welfare reform and affirmative action programs affecting education and the workplace. They argue that this book may be used as support of the arguments of this Republican majority, even though the authors find serious problems, (some definitional, some statistical, some logical) with the conclusions and recommendations found in its 845 pages, *including* the appendix. In fact, much of their criticism relate to the statistical methods found in the appendix.

While the authors think that this is an important book for those interested in education, social science and public policy, they are 'not persuaded by its argument, however and ... are not alone in our judgement....Suffice it to say that *The Bell Curve* has fared poorly in the eyes of its quantitatively oriented academic critics' (p. 29).

Devlin et al. start their criticism with the title. Few of H&M's arguments require the normal distribution of their data. 'Scores on intelligence tests that lie at the heart of the H&M arguments are decidedly not normal, even approximately' (p. 31). The scores are transformed to remove the skewness in the IQ data. 'Then they attempt to explain the implications of their estimated models by using "illustrative examples" of individuals falling way out in the tails of the IQ distribution!' (p. 31).

There is no caution of inferring causal relationship from regression analysis and no caution of errors of specification and bias. After an inadequate 'exposition of the technical basis of their arguments, it is not surprising that H&M lead their readers quickly to the edge of a causal cliff and drag them over the precipice into the contrived world of genetic determinism' (p. 31).

After a historical overview of genes and IQ and a discussion of what exactly is intelligence, the authors discuss the issue of the heritability of IQ and distinguish between two types of heritability. '...[T]he quantity H&M need to make their arguments about America's future is what is known among geneticists as *narrow-sense heritability,* whereas the quantity that they extract from the twins studies and report in the book is what is called *broad-sense heritability* plus the maternal effect).' Devlin et al. have reanalyzed data from original studies. 'Our best estimate of narrow-sense heritability for Caucasians in the United States is .33; for broad-sense heritability, it is .45' (p. 33). This is substantially lower than the .6 to .8 H&M seem to propose as the basis for their cognitive class structure.

In questioning the use of multiple and logistic regression, the authors address a series of five questions. (1) Are the data from the NLSY suited for the exploration of the possible "effects" of IQ and other individual variables on variable social outcomes? (2) Have H&M extracted the relevant variables for inclusion in their analysis? (3) Are the regression and logistic regression equations properly specified? (4) Do they provide an adequate fit to the data? (5) Presuming that the answers to questions 1 through 4 are positive, do we have sufficient evidence from these and other analyses to interpret the results in a causal fashion, as H&M do?

While the authors don't have space to address thoroughly each question, they note that most critics seem to grant that NLSY is suitable for the analysis, but question how the variables are measured and whether H&M then use the variables appropriately. There has been criticism of the surrogate variable H&M use for socioeconomic status (i.e., 'an arithmetic average of standardized version of four quantities—mother's and father's education (often reported via proxy interview), the logarithm of family income, and the status of "parental" occupation' p. 34). Devlin et al. mention that several individuals now working with the data shared by Charles Murray and subsequent analysis may confirm or refute H&M's analysis. H&M present no evidence of fit of the models to the data, models that show weak predictive value.

Devlin et al. conclude with the following:

(1) Intelligence cannot be described solely by IQ scores.

(2) Heritability is not properly modeled or interpreted in the way it was originally formulated by statistical geneticists.

(3) The potential effects of intervention are underestimated.

(4) Statistical procedures are incorrectly used and inappropriately interpreted' (p. 35).

James Case reviewed TBC in an article for the *SIAM News* (January, 1995, pp. 6, 12.) entitled "Is *The Bell Curve* statistically sound?" Whether he meant to punish us or not, he commented that 'Right or wrong, *The Bell Curve* is hardly the compendium of neo-Nazi pseudoscience some make it out to be. Despite the clarity of its exposition, the book's contents are only partially accessible to technically unsophisticated readers, since the claims made and the evidence adduced are both statistical in nature.' (p. 6)

After coining the term "IQtelligence" as "intelligence as measured by *g*," he criticizes the use of meta-analysis. 'Resting as it does on the still controversial statistical technique known as meta-analysis, the evidence with which the authors seek to establish the correlation between IQtelligence and adult status and earning power demands scrutiny' (p. 6).

A Black Perspective

The Black Scholar Symposium in the *Journal of Black Studies and Research* dedicated its Winter 1995 issue (Vol. 25, No. 1) to a thorough examination and critique of *The Bell Curve* from varied perspectives. The journal assembled several distinguished scholars for what it called The Black Scholar Symposium. The following is an annotated bibliography of the contributions therein.

Scientific racism: The politics of tests, race and genetics by J. Blaine Hudson, pp. 3-9.

Hudson admits that African Americans, Hispanic Americans and Native Americans have scored approximately one standard deviation below whites on intelligence tests since the beginning of their use. But researchers, like M&H, have interpreted that these differences have been genetically transmitted, ignoring 'the vast preponderance of social science and genetic research over several generations [which] indicates that this conclusion...is inherently illogical and baseless, and that differences in test score patterns reflect difference in how racial groups are educated and/or treated....' He then proceeds to show how the argument in TBC is wrong by considering tests and score interpretations, research design and research bias, the logic of test score comparisons, and concluding that 'racial differences in average IQ scores are simply one measure of racism and racial inequality.' He addresses the ideology of racism and the genetic argument showing evidence of the falsity of its two assumptions: (1) 'Races' exist and can be defined and clearly delineated and (2) Different 'racial' groups have radically different gene pools.

The Bell Curve: What's all the fuss about? by Jacquelyne Johnson Jackson, pp. 11-20

Of the many things there are to fuss about, Jackson's three biggest fusses are '(1) its premise [lower] of black-to-white cognitive ability; (2) its concerns about higher fertility rates among women of lower measured cognitive ability or dysgenesis; and (3) why it has received far more attention than Thomas Sowell's (1984, 1989) opposition to affirmative action (p. 11). She provides abundant research to argue against the above and other distressing aspects of the book: H&M's operational definition of blacks (i.e., blacks who define themselves as blacks); their reliance upon the classical tradition of studying intelligence (i.e., that general intelligence is the core of human mental ability, and not just a statistically manipulated artifact); the belief that cognitive ability is a determination of socioeconomic status and that it is not very malleable, and finally the extrapolation of their findings from the National Longitudinal Survey of Labor Market Experience of Youth (NLSY) to different black age-cohorts.

The fallacy of positivist reasoning. by Earl Lewis, pp. 21-24.

One of the fallacies is the belief in one's own constructions. H&M avoid 'race' by using the term 'ethnic.' The retreat from the scientific into the casual, noting differences in hair, color and muscle mass to evidence of race's genetic foundation. So how do H&M deal with millions of years of human contact and intermarriage? By accepting classifications from governmental surveys and other official data of what people call themselves. While acknowledging environmental factors, H&M conclude that intelligence is largely genetically determined. 'The authors, behind the gloss of statistical verification, have simply proved yet again that one's coefficients are not better than the data one assembles. Until we can establish that race is genetically bound, one cannot establish a clear link between race and what's called intelligence. To argue otherwise is to fall prey to the fallacy of positivist reasoning' (p. 24).

What's new in the IQ debate by Troy Duster, pp. 25-31.

Central to the debate concerning *The Bell Curve* is human genetics and what it means, and its potential for shaping social policy. Duster traces human genetics from its inception in the latter part of the nineteenth century (Karl Pearson, Francis Galton, Gregor Mendel, Charles Davenport, Herbert Spencer, James George Frazier, et al). Eugenics, a term coined by Galton, is the science of improving the qualities of the human race through selected breeding and other elitist practices that oppose the democratic vision of human possibility. Duster draws two conclusions from the research on the links between genetics, intelligence and race: (1) Nothing new has happened in the last thirty years in genetics at the molecular level. (2) What is new is not the genetics, it is the audience - the receptive climate since the mobilization against Jensen following his 1969 article.

The Bell Curve as the meaning of the academic will by Gerald Early, pp 32-38.

In this eloquent article, Gerald Early notes that the first twelve chapters of the book, dealing with intelligence, class among and social problem among whites, set up the

reader for the thirteenth chapter, which introduces ethnicity. From there to the end of the book, TBC justifies a selected group 'based on a sanctification of race and justified through the manifestation of something called intelligence;' and explains the complexity of life through that one characteristic. 'M&H, the good strict constructionists that they are, wish to remind us that the great white fathers of our land understood in their wisdom...that there is a level of immutability in human differences and inequalities.'

Plus Ç a change, Plus Ç a reste la memo chose by Karen Wanza, pp. 39-40.

'The more things change, the more they stay the same,' especially in psychometrics. Karen Wanza notes the history of IQ and testing, from Binet's ideas of intelligence (not fixed) and tests (for use solely in schools), through Lewis Terman's work at Stanford to include an intelligence quotient for adults, to Cyril Burt, 'who was knighted for his work as an IQ eugenicist.' This book comes in a reactionary climate, in which conservatives will apply M&H's proclamation 'that public policy should be measured against cognitive differences between the races' to 'dismantle all programs designed for social uplift.

The Assault on the human spirit: The Bell Curve by Randolph Quaye, pp 41-43.

Randolph Quaye notes that this book presents its proponents with a pseudo-scientific justification of racism, sexism and classism and 'is nothing more than a revisionistic eugenic idea, a social Darwinism that comprises still another polemic against the dignity and worth of black people.' He also cites Stephen J. Gould's *Mismeasure of Man*, in which Gould recounts ...[that] science, like all aspects of culture, reflects attitudes and prejudices that are present within society. Throughout history, science (especially pseudo-scientific inquiry) has been used to perpetrate social stratification and justify racism and sexism' (p. 41).

WANTED: Some Black long distance runners - the message of The Bell Curve by Warren C. Whatley. pp 44-46.

Warren Whatley finds the book to be a 'loosely argued set of propositions that rest on weak empirical foundations — propositions that are crafted for maximum shock value. ...[But] science is not the culprit here. The culprit is an attitude—America's fascination with its legacy of racial oppression' (p. 45). He suggests that it is time to 'take off the gloves' and require reparations payments for 'loss of life, welfare, income, wealth and dignity and . . . for the murder of the best and brightest among us' (p. 46).

The Mismeasure of man, by Stephen Jay Gould.

One of the authors whose opinions and writings have appeared most often in the discussions of TBC has been Stephen Jay Gould. Not only has Gould opined on TBC, but his work has been referenced and cited in other critiques of TBC. And one of his most cited works is *The Mismeasure of Man*. (1981). In this book, Gould thoroughly discusses three aspects of the criticism of TBC that have appeared and reappeared in the many reviews: 1) The reification of IQ. IQ is not a thing because we can arrive at a number. 2) The erroneous interpretation of causality based on nothing more than the existence of correlation, and sometimes a small one at that. 3) The continual search for and 'discovery' of theories and evidence to show the intellectual superiority of the group of which the 'scientist' is a member, usually Caucasian males. If the data and/or theory don't lead to the 'right' conclusion, Gould shows that one or the other (or both) may need to be changed, and consequently, are changed.

Additional Readings

An excellent collection of readings on TBC can be found in *The Bell Curve debate: History, Documents and Opinions.* (1995) by Jacoby and Glauberman. In addition to critiques of TBC, you can find in one place many articles of historical interest dating back to the early 20th century. This book would be a very good starting point for a seminar discussing the issues presented in TBC.

In conclusion, I can think of no more appropriate, if not totally balanced, stance on this issue than the one Stephen Jay Gould took during a symposium sponsored by Howard University and The Urban League on December 12, 1994. Gould attributes this stance to Alan Dershowitz from a private discussion. Gould said:

We really don't know the causes of these differences. We really don't, and that's the only honest statement. But think of it this way ... it has to do with Class I and Class II errors in technical parlance.... Suppose Herrnstein & Murray are right; but since we don't know that, we continue to try our very best to help out even though it can't be totally effective. That's one scenario. Suppose however, that we're right, and that these (class differences) are substantially remediable because the immutability assumption of ... [Herrnstein & Murray] is wrong, but we follow Herrnstein & Murray's recommendations. You see the differential results are so great. After all, if they're right, but we do our program, what's the result? So we spend some money and we've encountered some frustration. But think of the tragedy involved if we're right and we followed their recommendations and then extinguished the human spirit in millions of people where it could have been acknowledged and nurtured. And that's ultimately where it comes down on cost-benefit analysis or moral argument.

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Jacoby, R. and Glauberman, N. (eds). (1995). *The Bell Curve debate: History, Documents, and Opinions.* New York: Times Books.

Gould, S. J. (1981). *The Mismeasure of Man.* New York: W.W. Norton.

Letters to the Editor

Variables Related to Student Achievement

I read with considerable interest the above article by Bulach et al. in the Spring 1995 issue of the *Mid-Western Educational Researcher* (8, 2, 23-29). I have both positive and negative reactions to that article.

On the positive side, the authors are to be commended for taking a direct approach to the problem and using the correct unit of analysis (the school). Most people would use the student as the unit of analysis and run into all sorts of problems with non-independent observations. The authors are to be further commended for providing the actual raw data so that interested parties could check their work, run alternative analyses, etc.

That brings me to the negative side. Some of the statistics reported in the table in Appendix A and in the text are incorrect. The standard deviation of the achievement measures is 5.46, not .46. You can see that .46 is too small just by "eyeballing" the numbers; and the standard deviation can't be smaller than the range divided by the square root of twice the number of observations, or larger than half the range—see, for example, K.R. Hammond & J.E. Householder, *Introduction to the Statistical Method*, 1962, pp. 130-131. Also, the correlation between achievement and lunch is -.409, not +.409. (Perhaps the authors defined SES as 100 – lunch, but they didn't tell us that.)

Near the end of the article the authors say that "school climate makes an independent contribution to student achievement levels over and above the socioeconomic status of students" (p. 27). In order to claim that, they would have to carry out a hierarchical regression analysis, with SES "entered" first and climate "entered" second. They did not do so.

Although the authors used the school as the unit of analysis for the regressions, in the description of the instrumentation it appears that the individual was the unit of analysis for the determination of Cronbach's alpha. That psychometric dilemma was addressed by Sirotnik in a long article in the *Journal of Educational Measurement* several years ago (1980, 17, 245-282), and the example used throughout his article was climate!

The Bulach et al. article also contains a few typos (e.g., Cruickshank's middle initial is R, not P), they should have said "significance" rather than "confidence" on p. 26, and deleted the word "significant" from the hypotheses; but these things happen!

Thomas R. Knapp, The Ohio State University

Free and Reduced Lunch is Negatively Correlated with Student Achievement

I am very appreciative of Knapp's comments. He is absolutely correct about the negative correlation between the socio-economic status of students and achievement. The article stated that higher socio-economic status was related to higher achievement, when in fact higher socio-economic status was reported as a lower free and reduced lunch count. This means that there would be a negative correlation between free and reduced lunch and achievement, i.e., if one was high the other would tend to be low. This was true in our research. The statistic was presented with a positive sign instead of a negative. The sign was wrong, but the conclusions reached were valid.

His appreciation for including raw data might be worth considering in future articles. I have received other feedback commenting on the merit of including raw data with a research article. In addition to allowing greater insight into what was done statistically, it also is a great teaching tool with graduate students.

Clete Bulach, West Georgia College

ANNOUNCEMENT

APA Div. 15 Announces Conference on Teaching Educational Psychology

Authors, editors, and leaders in educational psychology will be participating in an intimate conference concerning the teaching of educational psychology (reservations limited to 75). The conference is June 8-11 at one of Scottsdale, Arizona's best regarded resorts. To reserve a place send $50 registration fee or to receive further information about the conference and facilities write to: Ms. Kari Knutson, Psychology in Education, College of Education, Arizona State University, Tempe, AZ 85207-0611

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University of Wisconsin-Milwaukee

On The Cover

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On the cover: The School of Education is housed in Enderis hall. In the foreground is "Earth Mother" created in 1969 from welded aluminum by Steven Jay Urry.

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8 1/2 x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article.
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Estimating the Reliability of Criterion-Referenced Tests Before Administration
Clint Chase, Indiana University
2

Motivation in Education: Current Emphases and Future Trends
Dale H. Schunk, Purdue University
5

Assessing Understanding in School-aged Children
Lori Clancy McKinney and Buford E. Wilson, Governors State University
12

Mentor Roles: Views of Participants in a State-Mandated Program
Tom Ganser, University of Wisconsin-Whitewater
15

1996 Conference Update
20

MWERA completes 20 years
Terri Strand, MWERA Archivist/Historian
24

Mentoring Education: An Interview with Carolyn M. Evertson
Gregory J. Marchant, Ball State University
Isadore Newman, University of Akron
26

Research in Action: Becoming a Better Teacher
Jack Snowman, Southern Illinois University, Carbondale
28

Transition to Graduate Level Elementary Teacher Preparation: A Formative Analysis
Susan Kent, The Ohio State University Newark
32

Integrated Curriculum: Its Use, Initiation and Support in Midwestern Schools
Daisy E. Arredondo, University of Missouri - Columbia
Terrance T. Rucinski, RARCO, Inc.
37

Voices in Education
Marlene Schommer, Wichita State University
42

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Estimating the Reliability of Criterion-Referenced Tests Before Administration

Clint Chase, Indiana University

Abstract

The classical procedures for calculating the two indexes of decision consistency (P and Kappa) for criterion- referenced tests require two testings on each child. Huynh and Peng & Subkoviak have presented one-testing procedures for these indexes. This article shows how these indices can be estimated without any test administration using Ebel's estimates of the mean, standard deviation and KR_{21}

Two reliability[1] indices have been recommended for criterion-referenced tests, P and Kappa (Berk, R.A., 1980). P is the proportion of persons consistently classified as masters versus non-masters. Kappa, widely known as Cohen's Kappa, is a similar index of decision consisency. The standard computational procedures for each of these indices call for two administrations of a test. This requires a considerable time and expense commitment before educators can decide if the test is reliable enough to use in decision-making. In most school-based testing applications the two-testing procedure is impractical.

There are, however, alternatives to the two-testing procedure, each of which can be done with just one test administration. One method was suggested by Huynh (1976), the second by Subkoviak (1976), and followed up by Peng & Subkoviak (1980).

The steps in Huynh's estimation procedure are as follows:

First, compute the mean (m), standard deviation (s), and the KR_{21} coefficient (a_{21}) for the observed scores. Note that Huynh uses the KR_{21} coefficient in this procedure. This is the appropriate coefficient of reliability to use with the beta-binomial model of test scores (Keats & Lord, 1962, p. 60-61); although other reliability coefficients may be substituted with apparently negligible effects on results.

Second, solve the following four equations:

1. $\mu' = \sin^{-1}\sqrt{\mu / n}$
2. $\sigma' = [(\alpha_{21} + 1) / (\alpha_{21} + n)]^{1/2}$
3. $\alpha'_{21} = [(n - 1) / (n + \alpha_{21})]^{1/2}$
4. $c' = \sin^{-1}\sqrt{(c - 0.5) / n}$

(Where ***n*** refers to number of items, and *c* is the test's criterion for passing.)

When these figures are available, compute:

$$z' = (c' - \mu') / \sigma'$$

Then using a table of the normal distribution, obtain the probability, p'_c, that a standardized normal variate is less than .

Following this, using the table of the bivariate normal distribution, find the probability, p'_{cc}, that two standardized normal variates with correlation a'_{21} are less than z'. [Huynh (1976), has made a simple table of the bivariate normal distribution that may be accurate enough for most work, but Gupta's table (1963) is more detailed.]

And finally, substitute the quantities obtained in the last two steps into the following formulae:

$$P' = 1 + 2(p'_{cc} - p'_0)$$

$$K' = (p'_{cc} - p'^2_0) / (p'_0 - p'^2_0)$$

(Actually, Huynh only solved for Kappa, but P can also be easily obtained as shown above.)

The second one-test system was proposed by Peng & Subkoviak (1980). The steps outlined below are essentially the same as in the Huynh procedure, except that Huynh's second step is omitted:

First, as with Huynh, compute the mean, standard deviation and KR_{21} for a set of test scores.

Next compute directly:

$$z'' = (c - 0.5 - \mu) / \sigma$$

Note that Huynh's four equatons are skipped, and that 0.5 is the standard correction for continuity.

1 *The term, Reliability, is used here because the cited writers have used it. However, in criterion-referenced tests the extent to which two assessments will place a student in the same category is often referred to as the Index of Decision Consistency.*

Third, from a table of the normal distribution, get the probability p''_0 that a standardized normal variate is less than z''.

Fourth, using a table of the bivariate normal distribution, obtain the probability, p''_{∞}, that two standardized normal variates with correlation a_{21} are less than z''. Then calculate:

$$P'' = 1 + 2(p''_{\infty} - p''_0)$$
$$K'' = (p''_{\infty} - p''^2_0)/(p''_0 - p''^2_0)$$

The Problem

Both the Huynh and the Peng & Subkoviak methods require that the user have the mean, standard deviation and the test reliability on hand. But suppose a test developer is in the early stages of putting a test together. No data have been collected at this point. However, the developer wishes to estimate the coefficient of decision consistency (P or Kappa) prior to the initial field application of the test.

The problem addressed in this study is to devise a procedure for estimating criterion-referenced "reliability" before the test is administered even once. The test statistics (mean, standard deviation, and reliability) are estimated rather than actual.

Procedure

Of the two procedures described above, the Peng & Subkoviak method is used here because it has the virtue of being simpler and it yields results very close to those of Huynh. The intent is to demonstrate how well estimated (versus actual) test statistics perform in approximating the criterion-referenced reliability indexes (P and Kappa), and not to compare the Huynh and Peng & Subkoviak methods.

Like Huynh's method, the Peng & Subkoviak procedure requires that the actual test statistics (mean, standard deviation and KR_{21} coefficient) be available on a set of test scores before an estimate can be made of P or Kappa. Normally, the test would be administered to get these (actual) test statistics. It is however possible to estimate these statistics before the administration of the test .

Ebel (1969) showed that, given some reasonable assumptions about the mean and standard deviation of a set of scores for a well-constructed test, fairly close estimates of the test statistics can be obtained as follows:

$$M = \hat{\mu} = n\frac{(k+1)}{(2k)}$$
$$s = \hat{\sigma} = n\frac{(k-1)}{(6k)}$$

where n is the number of items in the test, and k is the number of choices per item.

These estimates can then be applied to calculate an estimate of the KR_{21} reliability coefficient:

$$A = \hat{\alpha}_{21} = \frac{n}{n-1}[1 - \frac{M(1 - \frac{M}{n})}{s^2}]$$

With estimated mean, standard deviation and KR_{21} coefficient in hand, one can insert these values into Peng & Subkoviak's procedure and estimate P and Kappa without having to administer the test at all.

To demonstrate this procedure, data from three criterion-referenced tests were located, and the actual mean, standard deviation and KR_{21} coefficient were calculated. These statistics were applied to Peng & Subkoviak's system for determining the one-administration "reliability indexes". Then, the Ebel estimates of the mean, standard deviation and KR_{21} coefficient were calculated and these estimates were used to again calculate the same "reliability indexes". Last, a comparison was made between the P and Kappa indexes based on the estimated data and the P and Kappa based on the actual test data. In the actual test administration there were 112 cases in the first group, 98 in the second, and 56 in the third. Each test was made up of multiple-choice items.

Results

The results of the above procedures are reported in Table 1. Here the Ebel estimates of the test mean (M_E), standard deviation (s_E) and KR_{21} (A_E) are given, along with the actual values obtained from the test administration. For convenience, the symbols for actual test mean (M_A), standard deviation (s_A), and KR_{21} (A_A) are kept consistent. The P and Kappa values were calculated based first on the estimated descriptive data, then on the actual descriptive data. The results of the estimated procedure (without any test administration) appear to be quite close to those based on the one-testing method suggested by Peng & Subkoviak. On the basis of this modest trial, it appears that persons who wish to estimate the "reliability" of their criterion-referenced test before administering it may do so with reasonable faith.

Discussion

A single test administration procedure has the advantage of practicality for estimating coefficients of decision consistency for criterion- referenced tests. Huynh's one-testing procedure has proved to have little error (Huynh & Saunders, 1980); however, it involves considerable calculation. The procedure presented by Peng & Subkoviak (1980) is simpler to calculate and has also produced acceptable results. Both procedures require the mean, standard deviation and KR_{21} coefficient for the scores on the test based on a single test administration. Thus these existing methods require that the test be actually administered to obtain the desired "reliability" estimates. However, if one wishes to estimate the "reliability" of a criterion-referenced test while it is still in the production stage; its mean, standard deviation and

Table 1.

Statistics for Actual and Estimated data with P and Kappa values

Test	M_E	M_A	s_E	s_A	A_E	A_A	n	c	k	P_E	P_A	K_E	K_A
1.	28.1	26.4	5.6	7.2	.68	.81	45	30	4	.76	.80	.49	.56
2.	112.5	90.3	22.5	7.9	.92	.87	180	90	4	.88	.82	.65	.62
3.	16.7	14.7	2.8	3.2	.29	.43	25	14	3	.82	.84	.17	.19

Note: n = number of items in a test, c = criterion score, k = number of options per item in the test.
Subscripts E and A indicate statistics based on estimated and actual data respectively.
M, s, and A represent test mean, standard deviation, and KR_{21}.

KR_{21} can be approximated using Ebel's (1969) method. These approximations can then be substituted into the Peng & Subkoviak procedure, and an estimate made of the "reliability" indexes (P and Kappa) for the criterion-referenced test.

Does this method work? The modest demonstration presented here suggests that it has some promise. However, a much more extensive assessment of the procedure is necessary before a conclusion can be drawn as to when the pre-administration method is likely to produce acceptable results and when it may not.

In looking over the results of this trial, one must wonder what factors affect the differences between the actual and estimated mean, standard deviation, and KR_{21} coefficients. One likely factor is the difficulty of the items in the test. A very easy test would cause the scores to bunch up near the top of the distribution, whereas a very hard test would cause a bunching of scores in the lower range. Ebel's procedure will typically place the mean not far from the center of that score range which is above chance level. This skewing will cause the Ebel estimates to miss the actual mean, standard deviation and KR_{21} coefficient by varying amounts. How much skewness will be needed to seriously distort the estimated reliability indexes is not known at this time.

However, it appears reasonable to assume that one should be wary of skewness when using Ebel's estimates. For assurance that the estimated statistics will approach actual values, the test items must be of moderate difficulty so that the bunching of scores will be near the center of the distribution.

How much discrepancy between the actual and estimated statistics is needed to make an important difference in the reliability indices? In the current data, the actual and estimated means in Tests 1 and 3 were fairly close, but were more discrepant in Test 2. In spite of this, the P and Kappa values based on the estimated data were not markedly different from those based on the actual data for the three sets of test scores. Further work is needed here to determine when the difference between the actual and estimated data has an important impact.

One last point is in order. In the final analysis of any test, the quality of the items is a major factor in determining the reliability of scores. Poorly written items cause even good students to utilize random guessing to solve such problems. Random guessing should negatively impact the reliability of the data and affect both actual and estimated reliability of scores.

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860

Motivation in Education: Current Emphases and Future Trends

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Abstract

This article discusses motivational processes as they apply to educational contexts. Motivation is defined and compared to other constructs. A brief historical account of motivation theory and research is provided, to include important trends and areas in motivation research. The article concludes by suggesting four areas that future research might address: constructivism and learning, long-term motivation, teacher retention, motivation in the community.

Motivation has assumed a highly prominent position in education as theories have moved from behavioristic accounts to those incorporating cognitive and affective concepts. This shift in emphasis has expanded the focus of motivation research, which increasingly shows that motivation is central to teaching and learning (Pintrich & Schunk, 1996). Motivated students display interest in activities, feel self-efficacious, expend effort to succeed, persist at tasks, and use effective learning strategies. Motivated teachers believe they can help students learn, spend extra time on planning, and work with students to ensure they master content. When motivation declines other outcomes suffer. Teachers must not only impart knowledge and skills but also establish a motivating environment for learning.

Despite this breakthrough there exists much confusion about such issues as the nature of motivation, what variables affect motivation, and how motivation influences learning and performance. The field is at a critical point that requires clear understanding of motivational processes and a vision for the future of motivation in education.

Motivation Defined

There are many definitions of motivation. From a cognitive perspective, motivation can be defined in the following way (Pintrich & Schunk, 1996): **Motivation** is the process whereby goal-directed activity is instigated and sustained. It is clear that motivation has some overlap with other psychological constructs.

To illustrate, *learning* involves an enduring change in behavior or in the capacity to behave in a given fashion resulting from practice or other forms of experience. Motivation and learning are related but not synonymous.

Another similar construct is *self-regulation*, or the process whereby one activates and sustains behaviors, cognitions, and affects, which are systematically oriented toward the attainment of goals. Self-regulation differs from motivation in that self-regulation involves some degree of learner *choice* of outcomes, methods, settings, social and environmental resources (Zimmerman, 1994). Choice need not be a central feature of motivation, since people can be motivated to perform well even when they have no choice of activities.

Volition is often compared with motivation. William James (1890) viewed volition as the act of using the will. More recently, volition has been conceptualized as part of a larger self-regulatory system that includes motivation and other cognitive processes (Corno, 1993). Volition presumably mediates the relation between goals and actions to accomplish them (Heckhausen, 1991; Kuhl, 1984). Whereas motivation is the force behind establishing goals, volition is responsible for attaining them; for example, by keeping persons focused on the task and perseverant. Although not all investigators accept this division of functions but rather apply the term "motivation" to goal setting and goal-directed activities (Schunk, 1991), most researchers do not view motivation and volition as synonymous (Pintrich & Schunk, 1996).

Interest (or *intrinsic motivation*) refers to engaging in a task for its own sake; that is, for no obvious reward except for the activity itself (Pintrich & Schunk, 1996). Interest is a form of motivation but almost certainly includes such other processes as attention and metacognition (performance monitoring). Further, motivation is not confined to inherently interesting activities. *Extrinsic motivation* refers to the process of engaging in a task as a means to an end.

Historical Overview

At the start of the twentieth century, motivation was not a separate topic of study as it is today (Weiner, 1990). Rather, it was addressed in the realm of psychology—itself a new field of study. Wilhelm Wundt, who studied volition through the method of *introspection*, helped to establish psychology as a science independent of philosophy with the first psychological laboratory in Germany in 1879. Some early writers on motivation were Ach, Freud, James, and McDougall (Heckhausen, 1991; Heidbreder, 1933; Pintrich & Schunk, 1996; Weiner, 1992).

The rise of behaviorism in psychology helped to establish the scientific method as the framework for experimentation. Watson (1924) contended that if psychology was to become an objective and experimental science it had to concern itself with observable and scientific phenomena as the physical sciences did. Behavior was observable, whereas introspection, which dealt with subjective states that may have no basis in reality (e.g., perceptions), was not observable and thus not scientific.

Cognitive Explanations of Motivation

Prominent behavioral theories were formulated by Thorndike, Hull, Spence, Pavlov, Watson, Guthrie, and Skinner. In Skinner's (1953) operant conditioning theory, for example, a stimulus sets the occasion for the occurrence of a response, which is followed by a consequence. The probability of behavior occurring in the future is a function of the consequences of prior behavior. Reinforcing consequences strengthen behavior and make it more likely to occur; punishing consequences weaken behavior and lower its likelihood of future occurrence. Operant conditioning defines motivation (motivated behavior) as an increased level of responding or continued high level of responding brought about by effective reinforcement contingencies (Skinner, 1968).

The history of motivation research reveals a shift from explanations in behavioral terms to the use of cognitive mechanisms. In contrast to behavioral views, cognitive theories stress mental structures and the processing of information and beliefs. Cognitive theories became more prevalent in psychology as behavioral explanations were found to be wanting for much behavior and especially for complex phenomena (e.g., problem solving). The dominant contemporary learning and motivation theories are cognitive. Although cognitive theorists disagree about which internal factors are important (e.g., attributions, perceived competence, values, goals, social comparisons, affects), they all view motivation as a process and do not equate it with observable behavior (Pintrich & Schunk, 1996).

Field Studies

Laboratory studies are conducted in controlled settings; field studies are conducted where participants live, work, and go to school. Early motivation research was conducted in psychological laboratories. Laboratories have the advantage of controlling extraneous factors that can influence research results, such as people talking, windows to look out of, phones ringing, and hallway noise.

Despite these advantages, researchers increasingly are conducting studies in field settings to maximize generalizability of results to other similar settings. In contrast, generalization of laboratory results to the field is done with less confidence. Field studies can capture the complexity of factors that affect motivation and thus are able to provide a clearer picture of its operation.

Human Participants in Research

Researchers increasingly are using human participants in research. Much older psychological research used infrahuman species such as dogs, cats, and rats. Behavioral psychologists felt that behavior could be explained by referring to environmental conditions and that these factors operated across species. Since greater experimental control can be exercised over animals, they are preferable to humans as research subjects.

It is true that many processes operate across animals and humans; for example, both respond to the effects of rewards and punishments. A major difference, however, is that a wider variety of processes can be studied in people because they are capable of complex thought. Such processes as expectations, values, and goals, are important cognitive motivators (Pintrich & Schunk, 1996). In addition, humans allow for the study of motivation using complex tasks and situations.

Focus on Process

The focus of behaviorism was on behavior. Motivation was defined in terms of changes in the intensity, frequency, form, or persistence of behavior. *Products (outcomes)* were the chief variables of study and were affected by environmental conditions and prior reinforcements in the individual's life.

With the shift to cognitive psychology came a reconceptualization of motivation as a *process* internal to the individual that was influenced by personal and environmental factors. To study process required new ways of assessment. Researchers had to devise instruments to assess such internal variables as goals, attitudes, expectations, and values. There are potential problems with such assessments; measuring expectations, for example, requires asking persons to make judgments about mental states, which may not always be clear. There also is the possibility that people will deliberately distort self-reports to make themselves appear more desirable. Although self-reports have problems, available evidence shows they are valid and reliable indicators of mental processes, at least beginning in children by age 9 (Assor & Connell, 1992).

Educationally Relevant Content

Early motivation research often was conducted in noneducational settings and used tasks that had little relevance to school learning. Despite much of it being high quality, its low educational relevance precluded generalization of results to human learning and performance settings. Many studies used tasks that did not involve learning but rather performance of previously-learned actions (e.g., ring-toss games). While motivation is important for performance, it also can influence learning (Schunk, 1991). Researchers increasingly are conducting studies in schools using academic content (e.g., mathematics, writing, reading) (Schunk &

Hanson, 1985; Schunk & Rice, 1993; Schunk & Swartz, 1993).

A related trend is to study motivation over time with *longitudinal studies*. Much academic learning takes time as skills develop slowly. Longitudinal studies determine how motivational processes change and which influences are more important at various stages of learning. Research shows, for example, that feedback linking success with effort is important in the early stages of learning but that feedback stressing high ability has greater motivational effects as skills become established (Schunk, 1983).

Group Motivation

Motivation research traditionally has studied behaviors of *individuals*. Researchers aggregate data across persons to arrive at conclusions. In contrast, less research has studied motivation in groups. The group literature within social psychology (Asch, 1955; Deutsch, 1949) primarily is oriented toward group dynamics and interaction patterns rather than motivational processes.

Although studies of individuals continue to be prevalent, research increasingly is focusing on groups. Researchers have begun to determine whether individual and group processes operate in similar fashion and how they relate to one another. For example, research on cooperative and competitive groups shows that group outcomes affect individuals' perceptions of their capabilities and that these, in turn, relate to subsequent group motivation (Slavin, 1995).

Context Specificity

The field of motivation has moved from an emphasis on broad, global theories, which explained behaviors across diverse situations, to theories that are more context specific. As research showed that behavior was complex and capable of being influenced by multiple factors, theorists turned their attention to explaining motivation in specific situations. With respect to the construct of achievement motivation, for example, research shows that a general achievement motive is not strongly linked with achievement behaviors in different situations (Weiner, 1992). In contrast, motivation for learning and performing well in a general domain (e.g., mathematics) is context specific and more predictive of actual behavior (Bandura, 1986).

This is not to suggest that there are no behavioral generalities. As Bruner (1985) said:

> You do not quite need a different model of a learner to talk about learning how to play chess, learning how to play the flute, learning mathematics, and learning to read the sprung rhymes in the verse of Gerard Manley Hopkins . . . All of them will involve attention and memory and courage and . . . maintaining frustration tolerance. The issue . . . is that learning is indeed context sensitive, but that human beings, given their peculiarly human competence, are capable of adapting their approach to the demands of different contexts. (pp. 5-6)

Although we have moved toward greater context specificity, we know that such processes as goal setting, positive expectations, and valuing learning, operate across domains to impact motivation. Researchers today attempt to specify how such general processes are affected by situational conditions.

Constructed Meanings

Behaviorism dismissed cognitions from explanations of behavior. The *meanings* of situations and events were viewed as less important than the reinforcement contingencies that accompanied those situations and events. Cognitive perspectives on motivation are more phenomenological because they postulate that people act based on their perceptions (Pintrich & Schunk, 1996).

Constructivism, which represents an important new perspective in education and psychology, contends that behavior occurs in contexts and that people form or construct much of what they learn and understand as a function of their experiences in situations (Geary, 1995). As discussed later, the impact of constructivism on motivation is likely to increase.

Current Areas of Research Emphasis

Goals and Goal Orientations

Goal theory postulates that important relations exist between goals, expectations, attributions (perceived causes of outcomes), conceptions of ability and motivational orientations, social and self comparisons, and achievement behaviors (Ames, 1992a, 1992b; Blumenfeld, 1992; Weiner, 1990).

A central construct in goal theory is *goal (motivational) orientation*, or the purpose and focus of one's engagement in achievement activities. One distinction is between *learning* and *performance goals*. A learning goal refers to what knowledge, behavior, skill, or strategy, students are to acquire; a performance goal denotes what task students are to complete. Other types of goals mentioned in the literature that are conceptually similar to learning (performance) goals include *mastery*, *task-involved*, and *task-focused* (*ego-involved, ability-focused*) (Ames & Archer, 1988; Butler, 1992; Meece, 1991; Nicholls, 1984).

The importance of these goals for motivation stems from the effects they can have on cognition and action. Learning goals presumably focus students' attention on processes and strategies that help them improve their skills (Ames, 1992a). Students who pursue a learning goal are apt to experience a sense of self-efficacy (perceived capability) for attaining it and be motivated to engage in task-appropriate activities (e.g., persist, expend effort) (Bandura, 1986; Schunk, 1991).

In contrast, performance goals are hypothesized to focus students' attention on completing tasks. Such goals may not highlight the importance of processes and strategies underlying task success or raise efficacy for acquiring skills. Students may not compare their present and past performances to determine progress; rather, they may socially compare their work with that of others. Social comparisons result in low perceptions of ability and low motivation among students who experience difficulties (Schunk, 1989).

Meece, Blumenfeld, and Hoyle (1988) assessed children's goal orientations, perceived competence, intrinsic motivation, and cognitive engagement, during science lessons. Orientations assessed were task mastery (goal is to understand material and learn as much as possible), ego/social (goal is to please others), and work avoidant (goal is to minimize effort and do as little as possible). Active cognitive engagement referred to activities involved in self-regulation (e.g., review material not understood, relate current to prior material); superficial engagement activities were designed to complete work with minimal effort (copy answers, skip hard material). Students who held task-mastery goals reported more active cognitive engagement characterized by self-regulatory activities. Children reporting greater intrinsic motivation to learn placed greater emphasis on goals stressing learning and understanding.

Social/Contextual Influences

A related motivation research area explores the roles of social and other contextual factors. According to social cognitive theory (Bandura, 1986, 1991), motivation is a function of personal cognitions (expectations, goals) and self-evaluative processes. As people work toward goals, they evaluate their progress. The perception of progress enhances self-efficacy and sustains motivation. A perceived negative discrepancy between one's goal and present performance creates an inducement for change.

Social and contextual factors affect motivation through their influence on expectations, goals, and self-evaluations of progress (Schunk, 1989). Important factors include social comparisons, goals, rewards, models, classroom structures, and forms of feedback. Perceived similarity to models in important attributes can raise observers' self-efficacy and motivate them to try the task. One way to increase model-observer similarity and self-efficacy may be with peer models.

Schunk and Hanson (1985) compared the effects of videotaped peer mastery and coping models with those of teacher models and no models. Peer models increase self-efficacy and subtraction achievement better than teacher models and no models; teacher-model children outperformed no-model students.

Self-Regulation

Self-regulation refers to processes that students use to activate and sustain cognitions, behaviors, and affects, which are oriented toward the attainment of goals (Zimmerman, 1989, 1990). Researchers are investigating how students self-regulate key academic behaviors (e.g., planning and managing time, using social resources, establishing a productive work environment). Models of self-regulation often incorporate such motivational processes as goals, expectations, values, and personal satisfaction (Zimmerman, 1994).

Bandura (1986) hypothesizes there are three major phases of self-regulation: *Self-observation* refers to deliberate attention to specific aspects of one's behavior; *self-judgment* refers to comparing present performance with a standard; *self-reaction* involves making evaluative responses to judgments of one's performance. Positive evaluations sustain motivation; negative evaluations do not necessarily diminish it if students believe they can improve through such means as using better strategies or expending more effort.

Zimmerman and Kitsantas (in press) worked with high school girls learning to throw darts. Girls given a process goal surpassed girls given a product goal in dart throwing skill, self-efficacy beliefs, self-reactions (rated satisfaction), and intrinsic interest in dart throwing relative to other sports.

These results suggest that as strategic performing is being internalized, process goals enhance learning better than product goals, perhaps because students attempt to self-regulate performance aspects that contribute to higher scores. Once internalized self-control is attained, however, product goals may enhance learning better.

Information Processing

Information processing theories view learning as the encoding of information in long-term memory. Learners activate relevant portions of long-term memory and relate new knowledge to existing information in working memory. By organizing and rehearsing information, learners improve access to existing knowledge and the likelihood of remembering. When information is cued, learners recall it from long-term memory into working memory.

A central feature of the information processing system is the existence of *control processes*, which help the learner attend to, process, retain, and recall information. Control processes include self-regulatory and motivational activities, which can assist learning and performance in various ways.

The role of motivation within an information processing framework is illustrated in the *resource allocation model* (Kanfer & Ackerman, 1989; Kanfer & Kanfer, 1991). This model posits that attention is a key cognitive process; through attention, such other factors as abilities, motivation, self-regulation, and perceived task demands, affect performance. Attention is a limited resource and is allocated to activities as a function of motivation and self-regulatory processes. Distal processes refer to task-related goals and limit total resource availability. Proximal processes direct attention to on-task, off-task, or self-regulatory activities. Allocations

are adjusted based on feedback about effectiveness. When task demands are high (e.g., difficult goals), people allocate greater attention to the task; when demands are lower, they may shift some attention away from the task and to other activities. Self-regulation is a key mechanism for producing changes in resource allocation.

These results have implications for instruction. Teachers need to ensure that attentional demands are appropriate for students during learning and that competing conditions are minimized. Since motivational factors also are important, instruction should help build these outcomes as a means for ensuring continued allocation of attention to learning tasks.

Models of Achievement Processes

Atkinson (1957) helped to move the field of motivation away from a behavioral perspective by postulating that motivation is a function of the individual's *expectancies for success* and *perceived value* of engaging in the task.

By incorporating the concept of *value*, expectancy-value models made an advance over theories that did not consider the full range of personal perceptions. The *value* of any task depends on three factors: *Attainment value* is the importance of doing well on the task; *intrinsic (interest) value* refers to the inherent, immediate enjoyment one derives from the task; *utility value* relates to perceived importance relative to a future goal (e.g., taking a course to advance one's career) (Eccles, 1983; Wigfield, 1994).

Research by Eccles and her colleagues supports many predictions of her model. Values are positively related to achievement; however, when both expectancy beliefs and values are used to predict achievement, expectancy beliefs are significant predictors and values are not. In sum, values may be important for choice behaviors and student enrollment in courses, but once students are in the course, values are not as important for achievement as are expectancy beliefs.

Instruction

Historically, teachers were viewed narrowly as motivators who dispensed rewards and punishments. The motivator role of teachers has broadened in light of evidence that many teacher actions have potential motivational impact (Pintrich & Schunk, 1996). Further, effects are reciprocal: Teachers affect student motivation and teachers' motivation for teaching and helping students learn is influenced by how students react to classroom activities.

Ames (1981, 1984) explored the motivational effects of instructional grouping arrangements. Ames (1981) compared competitive and cooperative structures for their effects on children's self-evaluations. Performance outcome was manipulated such that one child in each pair outperformed the other; within the cooperative condition, groups either did or did not attain their goal. In the cooperative groups, group outcomes affected students' perceptions of their abilities and feelings of satisfaction. Group success alleviated negative self-perceptions resulting from poor individual performances, and group failure lowered positive self-perceptions of students who performed well. This and other research (Ames, 1984) shows that competitive failure has more deleterious effects on self-perceptions than does noncompetitive failure; however, when cooperative groups fail, dissatisfaction can run high regardless of one's individual performance.

Technology

It often is assumed that because computers are fun to work with they hold great motivational appeal for students and thus should facilitate learning compared with traditional instruction. For example, an important way to promote intrinsic motivation is through activities that involve *fantasy* through simulations and games that present students with situations not actually present (Lepper & Hodell, 1989). Some evidence suggests that fantasy can enhance learning and motivation. Parker and Lepper (1992) conducted two studies with third- and fourth-grade students. In one study, students were taught computer graphics programming where they received instruction both in traditional fashion and embellished with fantasy involving pirates, detectives, or astronauts. Students preferred the fantasy to the traditional context. In a second study, children received computer instruction and were assigned to an individualized-fantasy, assigned-fantasy, or no-fantasy condition. Individualized-fantasy students selected their fantasy context; assigned-fantasy students had their contexts assigned by the experimenter. Students in the fantasy conditions demonstrated greater learning compared with no-fantasy children.

How interest in learning may translate into better learning is not well understood but may involve focusing the learner's attention on relevant features of the learning context and increasing cognitive effort (Lepper & Malone, 1987), which many fantasy elements ought to do. It is imperative, however, that motivational embellishments be relevant to the task (Lepper & Hodell, 1989). Nonrelevant features or those that distract will not enhance students' mental effort. Software with embellishments (e.g., lights, noises) only loosely linked to what learners do quickly lose motivational appeal. Enhancements contingent on learner progress in skill acquisition convey that learners are developing competence, which builds motivation.

Future Directions

Constructivism and Learning

Constructivists have been primarily concerned with explaining how students construct knowledge structures in content domains (e.g., science, mathematics). Such research has made an important contribution to a learning literature that has tended to focus more on conditions affecting learners' acquisition of knowledge and strategies than on the role learners played in formulating the knowledge and strategies.

An obvious question is how motivation relates to the construction process (Sivan, 1986). We might ask whether intrinsic motivation to learn leads to more active constructivism. Intuitively it would seem that the more one wants to learn the harder one would strive to make sense of the environment and formulate a strategy that will assist with learning, but this hypothesis needs to be tested.

Long-Term Motivation

There are few longitudinal studies, and most do not explore the process whereby motivation changes. More research also is needed on such practical concerns as choosing a career and forming interpersonal relationships. These types of studies could explore which variables are most critical for motivation over long periods.

Teacher Retention

At a time when education is under pressure to produce results, many fine educators leave the profession. There are many reasons why teachers leave the profession, but one involves feeling a low sense of control and empowerment in their roles to make positive changes and a real difference in the lives of students (Ashton & Webb, 1986; Bandura, 1986).

Research might address such issues as how can schools be designed to provide productive work environments for teachers and what types of career incentives are needed to help retain teachers. A key motivational component in career choice and retention is teachers' sense of efficacy for performing well in their profession (Hackett & Betz, 1992). We might study what factors in teaching serve to build self-efficacy and which need to be improved.

Motivation in the Community

Greater research emphasis is needed on motivation in the broader community that includes schools, homes, neighborhoods, and businesses. We need to study motivational processes in- and out-of-school, because motivators do vary somewhat with the context. For example, teacher rewards are more important in school than outside of it, where other rewards (e.g., peer) take on greater significance. The two need not remain exclusive. Schools can invite community residents to come into the schools to assist with programs, and students can work in apprenticeship programs under the direction of community mentors. Such collaboration will provide an integrated perspective on motivation and help to sustain teaching and learning outside of traditional boundaries.

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continued on page 36

Assessing Understanding in School-aged Children

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Abstract

Previous studies have shown that adult subjects can recognize and, under certain conditions, recall material they have learned, but not understood (Wilson & Probst, 1990). Under conditions where the material must be understood to be applied, however, comprehenders and non-comprehenders are not equally successful (Wilson, 1991). Since children's cognitive processes differ from adults', this experiment attempted to replicate Wilson and Probst using 63 fifth-grade students to see if previous findings applied to children.

How many of you are familiar with the expression, "A watched pot never boils?" If you were in my classroom and I used that expression, you would probably understand that I mean "When you're waiting for something, it seems to take a long time." My use of the idiom would solidify the point in your mind. If, however, I were to say "He's like a bottle in the smoke," you might not understand the analogy. So, no matter how appropriate the expression may be, it would not help you learn what I'm teaching.

Suppose now that it's Friday, and I give you a test on those two expressions. Will you remember what the pot doesn't do? Where the bottle is? If I phrase the questions in that way, you probably will be able to answer them. If, on the other hand, I ask you "What happens when you're waiting for something" or "How vital do I consider this person," will you know the answers? Most likely, you will be able to answer the first question, but not the second. More importantly, you will not be able to use the information inherent in the second analogy for anything but carefully worded tests.

This is, in fact, what happens in many of our schools on a daily basis. Our students do not know which area of their background knowledge to activate to understand the new information we give them. In the above example, one would have to know "a bottle in the smoke" is a Biblical idiom. Then one would need to remember that in ancient Middle Eastern culture, unlike our culture, bottles were made of animal skins. A bottle that was left to hang near the fire, or in the smoke, would dry out and become unfit for service. So "a bottle in the smoke" was a colloquialism for something that had become useless. If you were unable to understand this expression, you were momentarily in the same position as a student who doesn't understand the expression A = L x W. Both expressions can be memorized, but they are of no value for future understanding. Children may be able to repeat the formula applied to a given concept, but they do not know how to actually solve problems. Simply learning the vocabulary and mnemonics isn't sufficient. Since the concept hasn't been learned, the students cannot recognize how to apply it or what constitutes errors (Wilson, 1987). This doesn't only happen to children. College students may have the same experience when studying statistics, physics, or neuropsychology.

Numerous experiments have demonstrated the relationship between comprehension of context and memory. (Bransford & Johnson, 1972, 1973; Fisher & Craik, 1977; Morris, Bransford & Franks, 1977; Tulving & Thomson, 1973; Wittrock, 1991). Wilson and Probst (1990) presented subjects with a series of sentences that were difficult to understand without knowing the context. For example, the sentences "The pin was important because the teeth broke" and "We went into the cornfield because the student forgot his glasses" are confusing if one does not know the context of the sentences. The "comprehenders" in the study heard a context cue before each sentence, such as "Blue jeans: The pin was important because the teeth broke." or "Driver's ed: We went into the cornfield because the student forgot his glasses." The noncomprehender group heard the sentences without any context cues. Later, the subjects were tested for recall using a cue physically related to the original sentence (a surface structure cue) or to the meaning of the sentence (a deep structure cue).

Examples of recall cues:

The pin was important because the teeth broke.
ss: teeth broke ds: fastener substitute

We went into the cornfield because the student forgot his glasses. ss: cornfield ds: auto accident

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Following the recall test, subjects were given a recognition test for the original sentences. Recognition was very good for both those who received the cue at the time of encoding (comprehenders M = .95) and those who did not (non-comprehenders M = .97). Hence, recognition was not affected by comprehension. Similarly, recall using surface structure retrieval cues was not affected by comprehension. A physical part of the sentence (a surface structure recall cue) worked equally well in retrieving the structural encoding of the original sentence for both groups (M = .40 and .44). However, when deep structure cues related to the meaning were presented, the performance of comprehenders improved to 64 percent recall, while that of the non-comprehenders dropped to 10 percent. When dealing with the meaning of the sentence, non-comprehenders were left to their own devices.

Why should students be able to remember things if they haven't really learned them? The above findings agree with studies of transfer appropriate processing (Fisher & Craik, 1977; Morris, Bransford, & Franks, 1977), and encoding specificity (Tulving & Thomson, 1973). Theoretically, if learning were tested in a way that matched a person's original processing, the material would be well recalled. If the material was learned in terms of its surface structure, rather than its meaning, we would expect cues related to its surface structure to be good retrieval cues. For example, if academic tests resemble the original material closely enough, the student can rely on the physical similarities between the original material and the test items to fill in the blank or choose the right multiple-choice answer. Yet, a discussion of the concepts involved may reveal that the student cannot understand the meaning of the concepts.

Since children's cognitive abilities may differ from adults' (Piaget & Inhelder, 1973), it is important to know how these findings apply to them. If, as hypothesized, children show the same ability as adults to recognize and recite material they do not understand, we as educators must be careful in our assessment of learning.

Method

Materials

A series of sentences, which were difficult to understand without knowing the context, was pretested on a pilot group of fifth-grade children. The children first heard the sentences without the context and asked if they could understand the sentences. Then each sentence was given preceded by the context as a comprehension cue. The children were asked if they understood the sentences this time. If so, they were asked individually to tell what they thought the sentences meant. Sentences that could be correctly understood with the comprehension cue, but not without it, were used for the acquisition list for the study.

Setting and participants

Sixty-three fifth-grade children participated in the study. Thirty-two children (17 boys and 15 girls) were in the experimental group. The other thirty-one children (17 boys and 14 girls) were assigned to the control group.

The entire "regular education" fifth grade class for the school visited during the study was housed in a double classroom, a holdover from the open classroom practice of previous years. Although the students were officially divided into two classes on the rolls, the group functioned as one class. Two teachers team-taught all the students, dividing teaching responsibilities between themselves. Many daily learning activities were conducted in small groups in various corners of the classroom. This study was conducted in the students' regular classroom with students in the two conditions gathered in different parts of the room as they would be for regular daily instruction.

This particular class was exceptionally large, so there were two full-time instructional aides assigned to the classroom. The classroom aides presented the study as though it were part of an ongoing series of exercises on listening and following directions. All the instructions for the study were given on audiotape or by the aides.

Procedure

The children were separated into groups for the study and asked to meet in different sections of the room. Both conditions were run simultaneously, in order to prevent the children from talking about the experiment with children in the other condition, and to complete the study as efficiently as possible so as to be least disruptive to the regular classroom schedule. At the beginning of the study, one of the aides read aloud the instructions to the entire group of children. This included an explanation that all the sentences would be presented on tape and the students had to listen carefully, because nothing could be repeated. In addition, the children were to rate each sentence for comprehensibility on a numbered sheet that had been provided for them. The aide went over the five-point rating scale and had the children mark which numbers meant "easy to understand" and which numbers meant "hard to understand". The purpose for rating the sentences was to keep the children on task as they listened to the materials.

The acquisition sentences for each condition were prerecorded and presented on audiotape at ten second intervals. The control group heard the acquisition sentences without the context comprehension cues ("non-comprehenders"). The experimental group heard the sentences preceded by the comprehension cues ("comprehenders"). The children were asked to rate the sentences for comprehensibility as they heard each sentence. After all the sentences had been presented, the two groups were subdivided for counterbalancing of the test materials. Those with odd-numbered test packets went to one side of the room with one of the instructional aides, those with even-numbered packets went to the other side of the room.

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Both the cued recall and recognition tests were given on audiotape, to eliminate confounding due to discrepancies in reading ability. The cued recall test (given first) comprised seven deep structure cues and seven surface structure cues, intermingled in a predetermined random order. Deep structure and surface structures cues for each sentence were counterbalanced across subjects. The students had 40 seconds to write the sentence that corresponded to the cue. (The time allotment had been predetermined by observing the pilot group). The recognition test consisted of seven target sentences from the original list randomly mixed with fourteen foils. Students were given a page numbered from one to fourteen with the words Yes and No written after each number. They were asked to circle Yes if they remembered hearing the sentence in the first part of the exercise and No if they did not remember it.

Examples of (acquisition context cues), sentences, and surface and deep structure recall cues:

(Watching television) The picture was poor because the wind blew. ss: wind blew ds: TV antenna

(Snowman) The man grew smaller when the sun came out. ss: grew smaller ds: melting figure

(Grandfather clock) The hand stopped because the chain broke. ss: chain broke ds: telling time

Results

The pattern of results for the research with children was the same as those found for adult subjects. Recognition performance did not separate comprehenders from non-comprehenders, t (61) = .28, ns. Comprehenders (M = .86, sd = .10) and non-comprehenders (M = .87, sd = .11) did equally well on the recognition test. All tests in this study were conducted with an alpha level of .05.

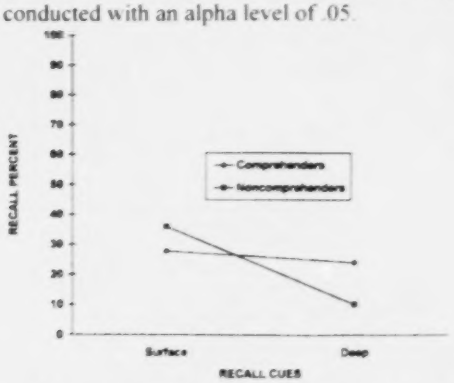

Figure 1. Comprehenders' and noncomprehenders' recall as a function of type of cue

A mixed design analysis of variance using comprehenders vs. noncomprehenders as a between subjects variable and deep or surface structure recall cues as a within subjects variable indicated there was a significant main effect for type of recall cue F (1, 61) = 22.22, MSe = .68, and a significant interaction between cue and experimental group, F (1,61) = 12.73, MSe = .39, but there was no effect for group, F (1, 61) = .44, MSe = .03. Planned comparisons found no difference between the two groups with respect to recall using surface structure cues, F (1, 61) = 2.01, MSe = .05. Deep structure cues, however, did separate comprehenders' recall from noncomprehenders', F (1,61) = 8.46, MSe = .04. The recall means for comprehenders and noncomprehenders shown in Figure 1 were M = .28 and M = .36 for the surface structure cues and M = .24 and M = .10 for the deep structure cues.

Discussion

When the to-be-learned material was re-presented at the time of test, either as an item to be recognized or as a surface structure cue, there were no test differences between the comprehenders and the noncomprehenders. When the children were given deep structure cues related to the meaning of the sentence, only the comprehenders were able to answer the questions correctly. The noncomprehenders did not understand the sentences and were not able to use the information in the sentences intelligently. This research demonstrates that recall using surface structure cues is not adequate for assessing understanding.

We asked the pilot group what they had learned from the sample sentences. It was clear that their understanding did not always match the original intent of the message. The sample sentences were from a list which was comprehensible to adults who heard the context (Wilson & Probst, 1990). Adults who are presenting new material to children must keep in mind that children have a different set of experiences from which to draw when interpreting new information. Background knowledge that is deficient must be filled in before attempting to build new structures on it.

One finding in the current study that differed from the data pattern obtained with adult participants was that the children in the comprehender group did not show better deep structure cued recall than surface structure cued recall. This may be attributable to the fact that inferential thinking is still a relatively new skill in fifth grade. Many students demonstrate a vulnerability to the way worksheets and tests are worded. When children are in the process of developing a cognitive skill, they may sometimes fall back on previously used strategies or vacillate between two or more strategies (Flavell, 1979, p. 221; Siegler, 1987, 1988).

Frequently we use tests which require no more than recognition or recall of learned material. The results of this study suggest that noncomprehenders as well as comprehenders could often fill in the blanks, select the right multiple-choice answer, or answer true/false questions. Furthermore, in situations where educators teach to the test, the assessment is tantamount to a simple recognition test. Results for our recognition test were very high. Recognition and surface-structure-cued recall may not measure understanding and consequently would not assess the ability of the learner to use the material in appropriate contexts. The

continued on page 45

Mentor Roles: Views of Participants in a State-Mandated Program

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Abstract

Interviews of 29 participants (14 mentors and 15 beginners) were analyzed for statements describing mentor roles and responsibilities. The participants were employed in a central state requiring the mentoring of beginning teachers, school counselors, and school librarians. The most prominent mentor roles emphasized providing beginners with support and encouragement, help with logistical matters, and assistance in "fitting into" a school setting. Statements about the mentor's role with respect to important curriculum and teaching skills were less prominent, whereas comments about the mentor's role in providing feedback were both frequent and strong. Analysis of the interviews also revealed that expectations for mentors were ambiguous and that flexible guidelines for serving as a mentor are desirable.

Mentoring programs for beginning teachers continue to be an important part of professional development in schools despite limited resources (Buttery, Haberman, & Houston, 1990; Furtwengler, 1993, 1995; Sclan & Darling-Hammond, 1992). Programs vary greatly, most utilizing the voluntary services of teachers willing to serve as a mentor for new teachers as an additional responsibility. A small number of programs release teachers from part or all of their teaching assignment to serve as full-time mentors (DeBolt, 1992; Ganser, Freiberg, & Zbikowski, 1994). Mentoring programs serve several purposes, including systematic provision of induction-year support, retention of promising teachers, and fulfillment of state licensing requirements (Huling-Austin, 1990b).

Regardless of specific organization, all mentoring programs depend on the services of experienced professionals whose roles and activities as mentors are often vaguely defined (Huling-Austin, 1990a). Serving as a mentor can also be a significant experience for veteran teachers themselves, complementing the middle and later stages of their career as classroom teachers by providing them with an opportunity to contribute to the profession of teaching (Burden, 1990; Cornbleth & Ellsworth, 1994; Fessler & Christensen, 1992; Fessler & Ungaretti, 1994).

The *purpose* of this paper is to present an analysis of how beginning professionals and mentors view the roles of mentors after one year of participation in mentoring programs within their school districts. The programs were established in response to a comprehensive educational reform act of a centrally located state. One provision of this act required all school districts to pair beginning teachers, school counselors, and school librarians with a mentor during their first year of employment. "Beginning" was defined to include experienced teachers, counselors, and librarians who are new to a district or who are re-entering the workplace after several years' absence, in addition to those who are starting their first job. Furthermore, the act specified that qualification for a license beyond the initial license required verification of participation in a mentoring program. Although the reform act ordered each school district to establish a mentoring program for beginning employees, little funding was provided to cover associated costs and no direction was given to districts in formulating program goals, design, implementation, or evaluation. As a result, mentors defined their work intuitively and based on enactment of the role.

Method

The participants in this study worked in three school districts located within 25 miles of a regional, public, comprehensive university. The districts were selected to include an urban, a suburban, and a rural school district. Additional information about the three districts is provided in Table 1.

Table 1

School District Characteristics

District	Enrollment	Elementary Schools	Junior High Schools	High Schools	Teaching Staff
Urban	23,000	41	8	6	1,400
Suburban	2,000	2	1	1	100
Rural	500	1	0	3	40

The participants included 13 mentor teachers and one mentor school counselor, and 13 beginning teachers and two

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beginning librarians. They were predominantly female and white, although they differed considerably in age, school level, and teaching experience.

Each participant was interviewed once near the end of the year of mentoring. Twenty-six interviews were tape-recorded and verbatim transcriptions were prepared. Three participants preferred that their interviews not be tape-recorded and in these cases notes taken during the interviews were later expanded. The interviews ranged from 16 to 51 minutes in length and averaged 29 minutes. Additional comments (e.g., the degree to which the participant seemed comfortable during the interview) were also recorded.

The interviews were semi-structured. The schedule included questions related to (1) the mentor's prior experience in formal and informal mentoring situations or the beginner's teacher preparation program and work schedule, (2) effective mentoring programs in general, (3) specific features of mentoring programs (4) factors used in matching beginners and mentors, and (5) possible benefits and problems of mentoring programs.

The verbatim transcriptions of the interviews were read for emergent categories of information, following standard procedures (Goetz & LeCompte, 1984). Utilizing the technique of peer debriefing (Lincoln & Guba, 1985), preliminary categories were expanded or collapsed, and criteria for inclusion of data in categories were established. This process resulted in six major categories: (1) mentor characteristics, (2) mentor roles, (3) matching factors, (4) features of formal mentoring programs, (5) benefits of mentor programs, and (6) potential problems of mentor programs. A computer program (Ethnograph) was used to facilitate the coding of data and the sorting and retrieval of coded segments (Seidel, Kjolseth, & Seymour, 1988).

Results

The participants' discussion of mentoring revealed two general categories of mentor roles: Helping roles and Professional roles. Broadly speaking, the emphasis in the Helping roles was on assisting the beginner in feeling comfortable in the new job, whereas the emphasis in the Professional roles was more directly related to the work of teachers. The Helping roles were more prominent than the Professional roles. In addition, the Helping roles seemed to come to the mentors more easily and naturally than the Professional roles.

Helping Roles

Support and Encouragement

The participants consistently highlighted the role of the mentor as someone who is "always there" for support and encouragement. EVE said, "[Beginning teachers] need someone to listen to them when they are frustrated and upset or discouraged." (Note: pseudonyms for the mentors are written in all capital letters [e.g., EVE], while only the first letter of pseudonyms for the beginners is capitalized [e.g., Heather]). NINA suggested that a willingness to "be there" was prominent when she was approached about mentoring. She recalled, "They said, 'Would you be her mentor?' and I said, 'Well, what do I do?' and they said, 'Well, you're just there if she needs you.'" The beginners also stressed this role for the mentor. For example, Heather summarized the role of a mentor as "just [to] support and give help."

Participants differentiated between mentor-initiated support and support provided only upon request. LORI believed that mentors often needed to make the first move to "build up their [beginners'] ego" and DIANE viewed a major part of her mentoring responsibility as working "to keep them encouraged and moving . . . when you see they're getting overpowered." The beginners also stressed that mentors' making the first move is often appropriate and appreciated. Nora noted that "It's always nice to have someone tell you the things that you do that are good." Lisa's comments in this regard were typical of many of the beginners: "You have someone to identify with you, to empathize with you, to offer possible solutions, to give you moral support. And someone [who] could also remind you that, 'Yes, the first year is always rough. Hang in there. You will survive.'"

Among some participants, the emphasis was clearly on the mentors offering support and encouragement when sought out directly by the beginners. This mode of support depended on establishing a mentor-protegé relationship in which it was safe for beginners to ask "a lot of questions that a brand new teacher may be afraid or embarrassed to ask" (Debby). Legitimizing asking "dumb questions" generally required explicit encouragement on the part of the mentor to overcome what Rachel viewed as a significant problem for novices: "A lot of people are afraid to ask a lot of stupid questions about simple matters."

Trust and confidentiality was essential, especially if the beginner were to feel comfortable admitting failure, as noted by TAMMI: There's going to be someone that you can say, 'This failed miserably,' and they're not going to run, tell the whole faculty, and it's not going to come back and haunt them later on some type of evaluative process. Knowing that there is someone that you can talk to who will offer advice, but who is never going to hold that over your head or file it for future reference.

At times, the support offered by mentors did focus on practical matters. For instance, Ursula, Lucy, and Rachel indicated that they were able to turn to their mentors for advice on personal matters, such as selecting a health insurance plan.

The role of mentor in providing support and encouragement to beginners was very important and inherently appealing to veterans and beginners alike. This is what draws many experienced professionals to mentoring in the first place (Ganser, 1993). It is also why beginners are inclined

to view working with a mentor as potentially beneficial and not just an additional "bother" during their first year of work.

Logistics and Paperwork

Providing beginners with information about the details of working in a particular school setting emerged as another important role for mentors. Although more directly related to the beginner's work than general support or encouragement, the emphasis in this role is focused on occupational "survival skills," not curricular and instructional expertise. SUE's comments were representative: [The] first thing that a new teacher has to have is help with just the way the school runs. Who do you see when you have a problem? Where do you get books, desks, etc.? How do you fill out forms that have to be filled out? Where do you go for assemblies? That type of thing.

Mentors described their efforts in this area in many different ways, from "familiarizing beginning teachers with programs in the school and especially the jargon and acronyms" (ANN) to answering questions like "What day do we get paid" (DIANE).

Many mentors viewed assisting beginners with paperwork as their most important function and one which could sometimes save the occupational life of the beginner. MARGE observed: These students come out of college with no concept of the amount of paperwork they have to do being a classroom teacher, that they think their time is going to be spent with these children teaching school and they have absolutely no idea.

Importantly, some participants viewed the outcome of this mentoring role as a prerequisite to effective teaching, believing that beginners cannot really focus their energies on teaching until paperwork and similar tasks are addressed. For example, SUE commented: Honestly, for a beginning teacher, the main thing to worry about probably for the first three months is just how to get around the school and how to take care of the day-to-day business that's so automatic for the rest of us. And then you can kind of be worried about teaching.

Elements of "day-to-day business" mentioned by participants included student records and cumulative files (LORI), attendance records (Zoe), field trip procedures (Cathy), and the location of the Scantron machine (Rachel). Debby suggested a checklist for the type of information needed: "Just a simple checklist to show the new teacher. Where the different closets are, where the science materials are kept for experiments, where you get the construction paper, what can you order, where are the workbooks."

Participants generally believed that helping beginners with the logistics of teaching is clearly needed because teacher training programs cannot prepare prospective teachers for work in a specific school and because quick school orientations are ineffective. Providing assistance in this area represents a subtle shift from general support and encouragement to matters which, although generally still quite mundane, are more directly related to the "work" of teaching rather than to the "job" of teaching (Feiman-Nemser, 1983).

Fitting In

Mentors' helping beginners with "paperwork" is part of helping them to become acclimated to a new work environment. However, knowing which form to use in a particular situation, even though necessary, is very different from becoming part of the professional work force in a school. Not surprisingly, therefore, many participants believed that another important role for mentors was helping beginners to become an integral part of the school staff. Often this period of transition was compared to moving into a new home. NINA, for example, talked about a mentor's obligation to "make sure they feel at home in this situation."

One aspect of helping beginners fit into the school was facilitating their becoming "a part of the peers" (TAMMI). For this reason, Debby and Connie appreciated their mentors' putting them "in touch" with other teachers in their schools. Two beginners wished that their mentors had made more efforts to integrate them into the school's faculty. Becky said, "I think a mentor should try to get you involved with any of the committees or the organizations there at school." Gail regretted that her mentor failed to invite her to more department meetings after school because of her part-time status.

Another facet of mentors' helping beginners to fit in involves familiarizing them with practices and norms that were acceptable within the workplace. For example, RITA recalled telling her beginner about the upcoming faculty Christmas party, "How elaborate that would be and what she was expected to do." RITA characterized this mentor role as communicating "things I guess that just are not written down."

Among the participants, Becky was the most outspoken about the need for mentors to provide beginning teachers with information about acceptable practices. For example, she sought from her mentor information about students' traditions which "they've done ever since who knows when." She also said, "One thing I found beneficial from the mentor is the school politics. I mean, you always need to know those little inside [things]."

As an example, she related how her mentor told her about an important but unwritten school district policy regarding dances. She says: I was planning the FFA and FHA social. It was around Halloween, and we had games and a pumpkin decorating contest. And then we were going to have thirty extra minutes and I wanted to have a stereo system and let them dance. He [Becky's mentor] informed me that the School Board would absolutely flip if we let them dance for thirty minutes.

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The participants described other ways in which mentors helped beginners fit in. For instance, Becky related that mentors in her district willingly presented the beginning teachers' concerns to the Board of Education without identifying whose concerns they were. She said, "We'd write up a list of things we'd want and then we would hand it to them [mentors] and let them bring it up. That way they [Board of Education] didn't know who it was coming from."

RITA recalled sensitizing her beginner to the community: Before Christmas I talked to her about decorating her room because we are very close to the Jewish synagogue. We have several Jewish children, and we try to take care of everybody's beliefs. Before she found out by making some mistakes or stepping on somebody's toes.

Among the participants, the emphasis of this mentor role was on helping beginners to fit into and conform to existing structures. There was no room, in what the participants said, for fostering the beginners' attempts to influence school-based norms or structures as they existed and to become the kind of change agents, even as beginning professionals, that Lacy (1987) and Zeichner and Gore (1990) suggest is possible.

Professional Roles

In addition to viewing mentor roles in terms of providing beginners with general support and encouragement and helping them to fit into the school's workplace structure, the participants also discussed mentor roles with respect to curricular and instructional issues, and assessment of the beginner's performance. In general, however, professional roles emerged haltingly as secondary to the socialization roles. If the time and resources for mentoring activities were limited, beginners and mentors alike sacrificed talk about curriculum and instructional issues for general encouragement aimed at enabling the beginner to "survive."

Curriculum and Teaching

Although the mentor's role in supporting beginners was prominent, it was not the only role the participants ascribed to mentors. In fact, TAMMI argued that mentoring must be more than just "Tell me your problems over a cup of coffee." An important professionalization role mentioned was sharing information about curriculum. For example, Nora commented that it was "nice to have another teacher or mentor on that grade level so you can talk about textbook things and about student ability at that level." Nancy believed that a mentor offered the beginner someone to "bounce off these curriculum ideas." Among the participants, only LORI suggested that being a curriculum expert was the mentor's most important role, believing "What we teach the children to me is the most important."

More typically, the participants relegated the role of the mentor as curriculum expert to sharing copies of handouts (Gina) and allowing access to the mentor's personal files and resource materials (Lisa, SUE). In addition, Ursula referred to her mentor's pointing out professional development resources, specifically, "books on classroom management and teaching strategies." Some mentors were very active in providing beginners with resources. For example, Ursula noted that her mentor "was always looking for things for me."

Much as curriculum expertise was described by participants as a relatively minor role played by mentors, so too was teaching expertise. There was some implication among the mentors that this was one of their roles, but little mention of it among the beginners. RUTH, MARGE, and ANN suggested that mentors must at least be competent teachers. RUTH believed that mentors "should be well versed on the latest trends in education and should have tried those." MARGE stipulated that one important role of the mentor was to make the beginner "a better teacher." ANN was the only participant who included demonstration teaching among a mentor's responsibilities.

Although there was relatively little evidence among the participants' remarks about mentoring activities focused on broad curriculum or instructional matters, there were indications that beginners turned to mentors for advice on specific teaching tasks. Zoe mentioned talking with her mentor about "how to assign point values . . . and participation grades." Lisa suggested that the mentor could provide information about different learning styles and different lesson plan formats. Nora described the mentor as someone to whom the beginner could turn for answers to questions like, "Do I give them all twenty spelling questions or do I give them ten?" The mentors, as well, mentioned specific elements of teaching which they discussed with beginners, including Individual Educational Plans and grading papers (DIANE), lesson plans (RITA), communication with parents (LORI), and classroom discipline (BRUCE).

Feedback

Providing beginners with feedback was a mentor role which elicits strong and generally negative responses from beginners and mentors alike. Simply stated, most participants tended to equate feedback with summative evaluation and strongly believed that evaluation was not the mentor's job. For example, IRMA said, "I would never be part of evaluation or assessment." Separating the mentor from evaluation was sometimes communicated directly and forcefully to the prospective mentor, as RUTH recalled: "We were told, Number One, that what we do with that person has nothing to do with their evaluation. We did not evaluate them." The beginners were equally vocal in separating mentoring from evaluation. Cathy said that "Mine [her mentor] had none [i.e., evaluation responsibilities] and that's really good that she didn't," and Nora stressed "No, they [mentors] don't evaluate you at all."

The participants offered several reasons mentors should not be involved in evaluating the performance of beginners. For one thing, they viewed evaluation as the responsibility of someone else, typically the principal. For example, NINA said, "I think that [evaluation] should be left to somebody that is more involved in that sort of thing." NINA and RUTH also argued that assessment and evaluation of teaching require special training which mentors generally did not have. "If they want someone to assess their teaching," NINA comments, "then I think they definitely need to have some training." Beginners were sensitive to this point as well, as indicated in Gina's observation: "Those people that are chosen to evaluate you are supposed to be learned in evaluating people, whereas the other teacher [i.e., mentor] may be clueless."

Another reason cited for mentors' avoiding evaluation was the perceived vulnerability of the beginner to what could be construed as "pressure" to follow a mentor's recommendations. For example, SUE said: I would really fear that the beginning teacher, particularly a young person with not a lot of confidence in [his or her] teaching ability, would say, 'Well, she said do it this way. That must be the right way because she's been teaching for so long.'

Lucy also pointed out that many beginners "immediately would start trying to say what they thought the mentor wanted them to say, as opposed to really relying on their own knowledge about what they need to be doing in the classroom," if the mentors were "going to be judgmental of you, especially if they are involved in a formal type assessment." SUE made a similar comment: "I think if you're assessing somebody that you're mentoring, that person's going to tend to buy into your technique."

The participants' most common reason for excluding evaluation from among the mentor's roles was the belief that evaluation is incompatible with support and encouragement, "too much a conflict of interest" (Carol). RUTH commented: "You're not there to evaluate or assess or make judgement. You're there to help." The participants persistently suggested that beginners would not trust mentors and be open with them if they believed that they were evaluating their work. For example, ANN talked about "a certain curtain dropping down" between beginner and mentor with the mention of evaluation. "You need someone you can trust," Lisa stated, "someone who's not critical and someone who is definitely on your side." SUE believed that "A beginning teacher's going to be too uptight to really work with a mentor in the way that he or she should, if that beginning teacher thinks that person's also is going to be watching me."

Despite general agreement among the participants that mentors should not provide negative feedback to the beginners, there was also some evidence to the contrary. TAMMI, for instance, appreciated her mentor's providing "constructive criticism" and ANN specified as an important goal of a mentoring program to help beginners realize their strengths and weaknesses. IRMA referred to observing her beginner teacher to "see if there is something I can suggest" and TAMMI indicated a need for her beginner "to come in and watch me." Gail regretted not having more feedback from her mentor. She said, "I probably would've enjoyed hearing some feedback from her as to my teaching ability or techniques. . . . I felt like I was probably less secure by not having a convenient opportunity to get the feedback that I was looking for." Rachel believed that the mentor would be a good person to evaluate the beginner because he or she knew the beginner better than anyone else.

Finally, some participants believed that mentors should prepare beginners for their own formal evaluation by the principal, sometimes by conducting "mock" evaluations of their teaching. For example, LORI described her beginner coming to talk with her as she was "getting ready for her evaluation." Connie described this from the perspective of the beginner: "The evaluation—it's so impersonal. When that time comes, it would be nice to just sit down with somebody and go over what exactly is going to transpire from Step One until the time that the state receives it [final evaluation]."

In general, the participants associated feedback that mentors might provide to their proteges about their work as a form of summative evaluation and as inherently threatening to a positive, productive relationship between beginning and experienced professionals. Participants made little effort to associate mentor roles with non-traditional, enabling forms of supervision such as peer coaching (Glickman, 1992). At the same time, the general hesitancy among participants to legitimize the evaluative or supervisory role of mentors may reflect professional limitations in the workplace (Liebermann, 1988; Little & McLaughlin, 1993).

Discussion

The participants interviewed in this study supported providing assistance to beginning teachers, counselors, and librarians in the form of a mentoring program pairing beginners with experienced colleagues. However, their view of appropriate mentor roles was quite narrow. Most of the participants defined the primary roles as providing beginners with emotional support and help in "paperwork" and other logistical matters. These roles are important ones for mentors, as evident in recent analyses of mentoring in the school setting (e.g., Bey & Holmes, 1992; Dollase, 1992; Wildman, Magliaro, Niles, & Niles, 1992). Still, the participants provided little evidence that mentoring roles could or should include an equally important focus on the central elements of teaching, such as curriculum design and instructional strategies. While few would dispute the value of mentoring as the participants described it, many would hope for more (Head, Reiman, & Thies-Sprinthall, 1992).

One key factor contributing to the participants' relatively limited view of mentor roles may be that their participation in a program of one year's duration. Research on the

development of beginning teachers shows that the "survival" needs of beginning teachers during their first years of teaching typically justify emotional support and help with mundane details of the job, but that in time these needs give way to needs related more directly to the skills, techniques, and strategies of teaching (Feiman-Nemser, 1983; Fuller & Bown, 1975; Veenman, 1984).

The participants' comments suggested a limited understanding of mentoring as a role related but not identical to teaching. Their persistent call for mentor training or at least for some guidelines for mentoring activities may account for their limited vision of mentoring more than the brevity of the programs. It appeared that little guidance was provided to the experienced professionals or the beginners about what mentoring might involve, including the various roles that mentors could play. In fact, even though the participants were identified by school officials as being part of a mentoring program, some of them were very uncertain—even near the end of the school year—that they had ever been part of a "program." This vagueness accounted for the participants' consistent emphasis on the need for more guidance, in the form of written guidelines, orientations, or brief training sessions for mentors.

The participants' views of mentoring revealed that they approached it intuitively, primarily because the roles and responsibilities of mentor and of beginner were left undefined. Not surprisingly, their vision of what might reasonably be expected of a mentor generally stopped short at providing emotional support and help with the more superficial, although important, aspects of teaching. These roles are safe versions of "extending a helping hand" but they do not push mentoring to a higher level in which the experienced professional does more than promote the survival of the beginner beyond the first year of work. In another respect, the participants' remarks supported the belief that the organization of teaching and the structure of schools create an inhospitable environment for mentoring roles which are directly related to the central features of teaching as a profession (Little, 1990; Schlechty & Whitford, 1989). For a variety of reasons, the participants in this study presented a vision of mentoring that was far less rich and varied than it might otherwise be, but which is reasonable given the context in which their mentoring was practiced.

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continued on page 45

876

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Carolyn M. Evertson

Professor of Education and Chair of the Department of Teaching and Learning, Peabody College, Vanderbilt University. Professor Evertson has published numerous books, handbook chapters, and articles about teacher education, learning to teach, creating and managing learning environments, and the culture of the classroom, including two books, *Learning from Teaching*, and *Student Characteristics and Teaching* with Jere Brophy. Her texts for preservice teachers, *Classroom Management for Elementary Teachers* and *Classroom Management for Secondary Teachers* (co-authored with Edmund Emmer, Barbara Clements, and Murray Worsham) are soon to be published in their fourth editions.

Mary M. Kennedy

Professor and the Director of the Institute for Research at Michigan State University. She has won four awards for her work on the nature of knowledge needed for teaching. Professor Kennedy has authored numerous journal articles and book chapters in these areas, and has authored reports specifically for policy audiences, including the United States Congress. She recently edited *Teaching Academic Subjects to Diverse Learners*, a collection of articles examining the nature of knowledge teachers need in each of the major content areas and the knowledge they need about students as learners.

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Proposal Submission Deadline is April 1, 1996

New Editorial Team to Take Over in 1997
Call for Manuscripts

The Mid-Western Educational Researcher is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews as well as theoretical and methodological discussions that make an original contribution to the research literature. There are four issues of the journal published annually.

The new editorial team is now accepting manuscripts for review and possible publication in 1997 and beyond. As usual, manuscripts are submitted to blind reviews by at least two researchers with knowledge of the literature in the appropriate area. Furthermore, the editors will review the manuscript and make the final decision. The review process requires approximately three months.

Manuscripts are accepted from faculty, students, and professionals working in non-educational settings. Membership in the MWERA is not required in order to submit a manuscript for review. The editors encourage the submission of revised papers that have been presented at the annual meetings of the MWERA, AERA, and other professional organizations.

Submit four (4) copies of the manuscript with a cover letter to Deborah L. Bainer (see address below). Manuscripts should conform to the style and format described in the Publication Manual of the American Psychological Association, 4th edition. All manuscripts should be typed, double spaced, on 8 1/2 x 11 paper with 1 1/2 inch margins on all sides. An abstract of less than 100 words should accompany the manuscript. The author's name and affiliation should appear on the title page only. Submissions typically are less than 20 double-spaced pages in length. If the manuscript is accepted for publication, the author(s) will be asked to provide a disk file (WP5.1 or WP6.0) as well as a printed copy of the final version. Please note that the editors reserve the right to make minor modifications in order to produce a concise and clear article.

Questions regarding the journal or the submission process may be directed to the new editors (1997-1999).

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MWERA completes 20 years

Terri Strand, MWERA Archivist/Historian

"The heart of an organization's memory is in its records. If an organization values its history, it must act to save the original letters, minutes, reports, photos, publications, and other documents that officers, members, ... have produced and compiled over the years." (Society of American Archivists)

1996 is a historic year for MWERA. According to our archival records, the association was founded on June 19, 1976 at the first "organizational committee meeting" conducted at Loyola University in Chicago. This meeting was attended by 11 members representing 8 midwest states: *Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, South Dakota, and Wisconsin.*

The meeting was an outcome of discussions concerning the need for a regional midwest educational research association that occurred during preceding annual meetings of the American Educational Research Association (AERA). Recalling the meeting two years later, Judd Harmon (MWERA's fourth president) wrote:

> "... although we did not have a formal meeting with officers and *parliamentary procedures, we did* have excellent representation from the States and we *did* have the association's first name: *The Upper Midwest Educational Research Association.* We also discussed the following topics: Name, Goals and Objectives, Membership, Officers, Organization, Liaison with other Associations, Finances, Activities, and Communication and Dissemination. Various people were given topics upon which to write position papers. A good sense of purpose and leadership was experienced by all."

Now, 20 years later, MWERA's membership has grown to 720 members representing 13 midwest states, 25 states outside the midwest, Washington, D.C., and Canada. MWERA's constitution and its divisional structure, which are patterned after those of AERA, are designed to encourage, improve, and disseminate information about theoretical and applied educational research. Association highlights include an annual meeting, workshops, journal and other publications, and most recently, a home page on the WWWeb.

A narrative historical study is underway, designed to orient new and current members to MWERA, facilitate planning activities, acknowledge members' contributions to the association, and expand regional and national interest in the association. Utilizing the archival collection of documents by Charles Anderson (Executive Officer 1980-1994), a new information storage and retrieval system will highlight archival categories including:

- *Association overview, including: organizational structure; membership statistics; lists of officers, editors, annual meetings, etc.; committees, special interest groups.*
- *Official documents: articles of incorporation, annual filing reports, and other documents.*
- *Constitution and by-laws*
- *Governance and membership*
- *Minutes of meetings*
- *Financial statements and budgets*
- *Journals and newsletters*
- *Annual conference publications*
- *Important correspondence/documents*
- *Association relationships (state and regional, and other associations)*
- *Election/Ballot and Tally documents.*

Based on detailed content analysis of the documents, the study is focusing on the stability and growth of MWERA, and other identified factors leading to MWERA's longevity and outstanding success as a professional association.

880

MWER is Now on the World Wide Web

Information about your MWER journal is now available for browsing and downloading on the Web. A Homepage has been set up, courtesy of the College of Education,at The Ohio State University, at the following address:

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Browse through the Index of Authors, or the Index of Articles, and retrieve the abstract of the published article. Sorry, the complete article is not available for downloading at this time, for various reasons, one of them being that we need our membership dues to keep the journal afloat. Abstracts posted on the Web are limited also to the last 3 years.

You can retrieve the Table of Contents for each MWER Issue for the last 3 years, or find information about how to submit a Manuscript to the Editor, how to become a MWERA member, or receive information about the next MWERA annual conference.

Included also are helpful links to other Web sites of interest to educational researchers, such as AERA, ERIC, AEA, Buros Institute, Regional Labs, US DOE, etc. Plans are underway to develop linkups to recent authors to enable you to make requests, suggestions, or comments, or to ask questions. We want to develop a forum which will facilitate educational research discussions, especially among faculty, graduate students and other professional interested in developing research ideas ,teams and projects.

Oops!

On page 26 of the Winter 1996 issue of MWER we printed an erroneous World Wide Web address for the unofficial Home Page for educational research. The correct address is:

http://bsuvc.bsu.edu/~00gjmarchant/edresearch.html

We apologize for any inconvenience this error might have caused.

881

Mentoring Education: An Interview with Carolyn M. Evertson

Gregory J. Marchant, Ball State University
Isadore Newman, University of Akron

Carolyn M. Evertson will be a featured speaker at the 1996 annual meeting of the Mid-Western Educational Research Association. In this brief interview she discusses teacher education, educational research and policy, mentoring , and teachers and classrooms.

Carolyn M. Evertson is Professor of Education and Chair of the Department of Teaching and Learning, Peabody College, Vanderbilt University. She was named Harvie Branscomb Distinguished Professsor in 1992. She has published numerous books, chapters, and articles about teacher education, learning to teach, managing learning environments, and the culture of the classroom. Her texts, Classroom management for elementary teachers and Classroom Management for Secondary Teachers, (co-authored with Edmund Emmer, Barbara Clements, and Murray Worsham) are soon to be published in their fourth editions.

MWER:What do you see as major issues facing teacher education today?

CME: One of the issues facing any institution that is preparing professionals, regardless of whether that profession is teaching or not, is the bridge between the discourse communities in which the preparation takes place, and there may be more than one, and the discourse communities of the workplace. It is that gap between where the professional receives this initial introduction or grounding and where they apply what they learn. This issue has been enduring. To the extent that we can even recognize the separation and try to address it, we make progress. It comes down to learning to understand these worlds from multiple perspectives.

MWER:It sounds like you have some question as to whether or not universities are the best place for teacher education.

CME: I don't have any doubt that they are. However forging these links with the world of practice is a tough job for universities or any teacher preparation institution largely because of the conflicting incentive systems and values within those institutions with those of our system of public education. Unless we can broaden our understanding of what constitutes scholarship, much of the work done in teacher preparation will go unacknowleged and misunderstood.

MWER: How can that be changed?

CME: One way is in the way we describe what we do. I don't think we talk about it very well, nor are we able to create the vivid images that communicate to the lay person who has a stake in education. Second, I would work hard within colleges and universities to broaden the definition of research and scholarly productivity. The late Ernest Boyer argued that the scholarship of application has too often been defined strictly as service and has been discounted as a legitimate research activity; nevertheless, this type of scholarship asks the question, "How can knowledge be responsibly applied to consequential problems?" What people tend to forget is that many of our great universities were founded on the principle that higher education must serve the interests of the larger community. We have gotten away from this basic principle, I think. Those hired to work with schools generally have not had their work respected.

MWER:Unless you get it published.

CME: You can often get it published, but you have to frame it in a way that makes the article look like it contributes to the scholarship of discovery or integration. The trick will be to broaden the definition of legitimate research to include the scholarship of application in its own right.

MWER: What trends do you see in education that should be of concern?

CME: Our tendency is to prescribe simple solutions to complex problems. There is also the tendency to endorse or attack labels such as "whole language," "character education," or "outcome-based-education" without accurately representing the principles behind them. Often these attacks on educational practices are convenient ways of gaining an audience for another agenda.

MWER: Why don't legislators and policy-makers pay more attention to educational researchers?

CME: I think it's because we are seen as irrelevant. A great deal of the policy governing teachers and teacher preparation is made by policy-makers who have their own experiences with public school education and their own anecdotal evidence; sometimes that is not positive. Nevertheless, we all have a stake in our schools and the people who work in them, but we all have different ideas about what it will take to fix them. Many people's images of schools are drawn from what it was like when they were students.

MWER: Anita Woolfolk described a presentation in which she gave a great deal of educational research that supported a particular approach and had one person raise a hand and erase all of that by telling a contradicting personal experience. Berliner has said the same thing about the power of stories. That is exactly what you are saying about policy-makers. That goes along with your changing the notion of what research is, because in order to get that kind of anecdotal information out it has to be considered part of research.

CME: Policy-makers have heard plenty of negative personal stories. The positive stories are too often buried in journals that are not easily accessible.

MWER: We also have a tendency to avoid overstating our case and we appear very wishy-washy even about the things that we are pretty sure about. We always include a postscript of "but more research is needed." Policy-makers say, "Well, if more research is needed, do the research and come back and tell us when you know something."

CME: Yes, and that is a very pragmatic attitude for them to assume. I don't see it changing for a while.

MWER: How do philosophies and approaches like the radical constructivist movement (with no objective reality), play to these people?

CME: Again, here is the problem of labels and images. The basic question for most citizens and parents is, "OK, but will they learn the multiplication tables?"

MWER: You seem to be in touch with the needs of teachers.

CME: I've seen that we can make lives better for teachers, kids, and parents. I have seen it happen. But we all need to keep the lines of communication open.

MWER: What has the expert/novice research contributed to our understanding of effective teaching?

CME: One of the real contributions of this line of research was to underscore the developmental nature of learning to teach. We had unrealistic expectations of new teachers, namely that they would emerge from their teacher preparation with everything they needed to be good teachers. I think we know now how naive that was. The expert/novice work has helped to provide a theoretically important base for continuing professional development.

MWER: Your mentoring work speaks to this development. What makes a good mentor?

CME: The idea of mentoring or being mentored is something everyone likes. It is intuitively appealing; we would all like to have a close friend and knowledgable supporter when we are learning something new. Nevertheless, just because it is a good thing to do doesn't mean that experienced teachers know how to do this. Teaching another adult or being a support for another adult requires other skills that may be different from those used in teaching a classroom of children. Just because one is experienced does not necessarily mean one will be a good mentor. We have found that there are some attributes, however, such as the ability to take the perspective of another, the ability to listen, and to put aside personal biases so that the other person can articulate and pursue his or her own questions. These things are often hard for us to do, especially if we have a lot of experience in an area.

MWER: What would you see as the key for beginning teachers to be successful?

CME: To have local support within the school community; not just by word but by action. This has to be more than informal support by a few kind teachers or administrators. There needs to be a common value within the faculty that says, "It is important to support the beginning teacher in the workplace."

MWER: In a recent article (Randolph & Evertson, 1994), you described the changes in the nature of classroom management associated with moving conceptually from work-oriented to more learning-oriented classrooms. Can you give some specific examples of changes you see in classroom management?

CME: I think there are changes in the way we are thinking about classroom management. This is in part due to the emphasis on teaching for understanding and the reemphasis on the student being at the center of learning in the classroom. The questions become involved with how we as teachers orchestrate the activities in classrooms in ways that support learning, and what roles and responsibilities do teachers and students assume. For a long time, classroom management has been and still is associated with control and discipline, and with questions about the best ways to get students to comply. We are simply saying

continued on page 31

Research in Action: Becoming a Better Teacher

Jack Snowman, Southern Illinois University, Carbondale

Abstract

Greg Marchant, a past editor of ***MWER****, and now an Associate Editor of the* ***Newsletter for Educational Psychologists*** *posed the following question to anyone who cared to answer: "Why are research results in educational psychology seldom reflected in educational policies, and what can be done to improve the application of research findings to practice?". Several respondents noted that while there are numerous examples of research findings that can easily be turned into useful classroom applications, many of them languish in our academic journals because they are written by researchers, for researchers, and in the language of researchers. This column has attempted to address this problem.*

Teacher Expectancies Subtly Communicated But Usually Understood

In 1968 Robert Rosenthal and Lenore Jacobson published a study called *Pygmalion in the Classroom* in which a group of first- through sixth-grade teachers in a single public school were led to believe that, on the basis of a special test (called the Harvard Test of Inflected Acquisition), certain students in their class would show significant academic gains in the current school year. In fact, the test was the Flanagan Test of General Ability, a standard group-administered test of scholastic aptitude, and the "high-scoring" students were randomly chosen. At the end of the school year, all students were again given the Flanagan Test of General Ability. Rosenthal and Jacobson reported that those students who were identified to teachers as being on the verge of making significant academic gains scored significantly higher on the retest than did those students who were not so identified. Presumably, the expectation that some students were primed to learn led teachers to interact with these students in highly beneficial ways, and these interactions caused the students to score significantly higher on the Flanagan.

Although the original study was, to say the least, both controversial and strongly criticized, the general phenomenon itself is now well accepted. Dozens of studies have found sizable positive and negative teacher expectancy effects on classroom achievement. Marjorie Wuthrick (*Phi Delta Kappan*, 1990, volume 71, number 7), for example, found that primary grade teachers react differently to students in the fast-track reading group than to students in the slow-track group. When working with the more proficient readers, teachers tend to smile, lean toward the students, and establish eye contact more often. Criticism tends to be given in friendlier, gentler tones. The oral reading errors of proficient readers are often overlooked. When corrections are given, they are made at the end of the sentence or other meaningful unit rather than in the middle of such units. And comprehension questions are asked more often than factual questions as a means of monitoring students' attention to the reading selection. Less proficient readers, on the other hand, are corrected more often and in places that interrupt meaningful processing of the text, are given less time to decode difficult words or to correct themselves, and are asked low-level factual questions as a way of checking on their attention. Teachers' body posture is often characterized by frowns, pursed lips, shaking of the head, finger pointing, and sitting erect. In sum, through a variety of subtle ways, teachers communicate to students that they expect them to perform well or poorly and then create a situation that is consistent with the expectation. As a result, initial differences between good and poor readers either remain or widen over the course of the school career.

Just how subtle and far-reaching teacher expectancies can be was demonstrated in an ingenious study by Elisha Babad and Paul J. Taylor (*Journal of Educational Research*, 1992, volume 86, number 2). These researchers had 10-year-olds, 13-year-olds, 16-year-olds, and experienced high school teachers from New Zealand watch a set of 48, 10-second videotaped segments of four Israeli teachers talking about and teaching two students from each of their classrooms. One student was described as "a good student of high potential" and the other as "a weak student of poor potential." In each segment, only the teacher was seen and/or heard. On 16 of these brief clips only the teacher's voice was heard (the picture was turned off). For the second set of 16, the teacher was seen but not heard (the sound was turned off). For the final 16, both sound and picture were available. The purpose of these conditions was to see whether teachers communicated any expectancies for these two students through such subtle cues as facial expressions, pos-

ture, gestures, and tone of voice. What made the analysis of voice features possible was the fact that the Israeli teachers spoke in Hebrew, a language that none of the New Zealanders understood. When the teachers in the videotaped segments talked *about* their students, the New Zealand judges did not detect any evidence of an expectancy. But when the teachers talked *to* their students (who were present but could not be seen or heard) in the picture and sound plus picture conditions, the judges, including the 10-year-olds, detected strong expectancy differences. Given that the judges were from New Zealand while the teachers were Israelis, it appears that nonverbal expectancies are so powerful that they can be communicated across cultural boundaries.

From the Cooperative Classroom to the Cooperative School

If you follow the research literature on cooperative learning, you may be wondering if there's anything left to learn about its effectiveness. Over the last 20 years, thousands of studies have examined its ability to improve learning, motivation, and interpersonal attitudes. But all of these studies have been done at the level of the individual classroom. Would cooperative learning be equally successful if it were implemented throughout an entire school? Robert Stevens and Robert Slavin (*American Educational Research Journal*, 1995, volume 32, number 2) put that question to the test.

Their study sought to address two general questions: (1) Is cooperative learning an effective means of instruction when used in many subjects by all teachers in a school over a two-year time period? (2) When cooperative learning is used as the primary mode of instruction is it as effective as more conventional methods?

The cooperative learning program was implemented in the 2nd through 6th grades of five elementary schools. In addition to the usual elements that make up cooperative learning, Stevens and Slavin provided opportunities for teachers to collaborate with and coach one another, for teachers and building principals to collaborate with one another, and for principals and teachers to collaborate with parents.

Two specific cooperative learning methods, Cooperative Integrated Reading and Composition (CIRC) and Team Assisted Individualization - Mathematics (TAI), were used most often and by all teachers because they have been shown in numerous research studies to be among the most effective of all cooperative learning techniques for improving achievement. Other techniques, such as Teams-Games-Tournaments and Student Teams-Achievement Divisions were used as adjuncts for teaching other subjects (e. g., social studies, spelling, science) as teachers saw fit. District-adopted textbooks for language arts and mathematics were used as supplements to the cooperative learning materials.

Three other elementary schools served as comparison schools. Teachers in these schools covered the same subjects and objectives, but did so by using their normal instructional materials (e.g., textbooks, workbooks, worksheets) and methods (e.g., ability-based reading groups, whole-class instruction with follow-up activities).

The results after two years can be fairly characterized as mixed. Cooperative students scored moderately higher than comparison students on tests of reading vocabulary, reading comprehension, language expression, and math comprehension, but not on tests of language mechanics and math applications. Attitudes toward reading, language arts, and math were the same for both groups. Although perceived self-efficacy for reading and language arts increased modestly for the cooperative students, there was no corresponding increase for math. Lastly, students in the cooperative learning schools listed more classmates as friends than did their peers in the comparison schools.

There is no question that these results are somewhat weaker than what is typically found when cooperative learning is tested in individual classrooms over shorter periods of time. But given the scope and duration of this project, that's not surprising. What should be emphasized is the fact that cooperative learning can be substituted for more conventional materials and methods within an entire school with no loss of achievement in some areas and gains in others.

Teaching for Transfer: Helping Students Get from Here to There

Transfer of learning has always been one of education's top priorities. Jerome Bruner expressed the belief of most educators when he said in his 1960 book, *The Process of Education*: "Learning should not only take us somewhere; it should allow us later to go further more easily . . . it should serve us in the future." One frequently used instructional tactic to help students use what they know to solve a current problem is to provide them with an analogy that mirrors the structure of the target problem. While this tactic can work, early research suggests that it has its limits. During the early- to mid-1980s, Mary Gick and Keith Holyoak, for example, found that for students to recognize the usefulness of an analogy, it must mimic the target problem in both structure and surface details.

In their initial experiments, Gick and Holyoak had college students read a story about a general who wanted to capture a fortress. If the general used his entire army, the attack would succeed. But many of the surrounding villages would be destroyed during the attack because of mines planted along the roads leading to the fortress. This outcome was unacceptable. The general's solution was to divide his army into smaller groups that could slip through the minefields, send each group along a different road, and have them converge on the fortress at the same time. The students were then given a second story to read that concluded with a problem for them to solve. The second story was about a patient with an inoperable stomach tumor. The patient's doctor could destroy the tumor with a beam of high

intensity x–rays, but healthy surrounding tissue would be destroyed in the process. Although a beam of lower intensity would not damage healthy tissue, neither would it destroy the tumor. The problem posed to the students was how to use radiation to destroy the tumor without destroying the healthy tissue at the same time. Surprisingly, only 30 percent of the students realized that just as the general solved his problem by dividing his forces and having them converge on the fortress simultaneously, the doctor could destroy the tumor by using several beams of low–intensity radiation aimed from different directions.

In a follow-up study, students first read a story about a physics lab that used an expensive light bulb. The filament, enclosed in a permanently sealed bulb, was broken. It could be repaired with a high-intensity laser beam. This solution was unacceptable, however, because a high-intensity beam would also shatter the glass. The problem was solved by using several lower–intensity beams aimed at the filament. As before, students then read the inoperable-tumor story. Because the details of the light bulb and tumor stories were very similar, the outcome in this case was dramatically different. Almost 70 percent of these students were able to solve the tumor problem. This figure was increased to 75 percent when the subjects were told that the first story could help them solve the problem in the second story.

In volume 87, number 6 (1994), of the *Journal of Educational Research*, Ines Solomon argues that most of the subjects in Gick and Holyoak's first experiment may not have understood the relationship between the analog and the target task because the former was presented as a story whereas the latter was a problem to be solved. To test this hypothesis, Solomon gave ninth-grade students one of four types of analogies to help them solve a science problem that dealt with the theory of molecular movement (a topic the students had covered in class two months earlier). The target problem consisted of a 250-word passage about a school laboratory experiment in which students had to cool a beaker of melting ice because it had gotten too hot, and six multiple-choice questions that asked about aspects of the experiment. The analogy given to Group 1 described a group of cheerleaders who, in the course of practicing their routines, stepped out of formation, wandered over the practice field, and bumped into each other as the marching band practiced its loud and lively music. Like the target task, the analogy concluded with a problem (and suggested a solution). Subjects in Group 2 received the same analogy, but it was set instead in a story format. The analogy given to Group 3, while, set in a problem format, was similar to the target problem only in its surface details. It described a science class experiment in which it became necessary to cool a beaker of steaming, bubbling sugar. Group 4 was given the same surface analogy in a story format. A fifth group of subjects received no analogy and served as controls.

Students whose analogy was set in a problem format (Groups 1 and 3) scored significantly higher than students whose analogy was set in a story format (Groups 2 and 4). And students whose analogy was structurally similar to the target problem (Groups 1 and 2) answered more of the six multiple-choice questions correctly than did students who received a superficially similar analogy (Groups 3 and 4). As expected, students in Group 1 scored significantly higher than the other three analogy groups and the control group.

Multicultural Education: Do We Teach What We Preach?

Pick up an education journal or attend an education conference these days and the odds are high that you will encounter articles and papers about various aspects of multicultural education. And over the last three years dozens of books on multicultural education have been published. It is, indeed, a very hot topic. But does all of this heat automatically produce light? Are preservice teachers as well informed about the nature of multicultural education as the above activity suggests? The answers reported by A. Lin Goodwin in volume 45, number 2 of the *Journal of Teacher Education*, might surprise you. Goodwin surveyed 80 preservice teachers who were completing their teacher education programs in 1991 about their conceptions of multicultural education.

The first of three open-ended items in Goodwin's questionnaire was, "What, in your opinion, are two of the most important goals multicultural education should seek to establish?" Most of the responses (41%) concerned knowing others. Students could be helped to know others by learning about different cultures and their histories, by highlighting similarities and differences among cultures, by emphasizing the nature of non-white cultures, and by pointing out the contributions made by all groups to human progress. The second most popular response to the above question was that multicultural programs should change the way people feel about others who are different. This could be done by learning to empathize with the perspective of others, tolerate differences, communicate more openly with others, accept differences, and value differences. Other responses about important goals concerned addressing the needs of students by fostering pride in one's culture and building self-esteem, and producing social change outside the classroom.

The second item in the questionnaire asked students to "list examples of multicultural practices you have observed or implemented in your student teaching placement(s)." Of the 193 responses given to this item, 39% indicated that multicultural practices were embedded in normal subject matter (e.g., folktales, music, historical facts). Most of these implementations (47 of 76) were judged to be short-term and ad hoc in nature. Only 29 responses indicated that a multicultural perspective was embedded in an entire unit of study, and 26 of those occurred in the elementary grades. The second most frequent implementation (17% of responses) was inviting students to share aspects their own cultural backgrounds. In third place with 12% of the re-

sponses was celebrating special events or holidays (such as Black History month or religious holidays) with field trips, guest speakers, and festivals. The remaining responses, which were all in single digit percentages, were bilingual education programs, establishing a positive classroom climate by the teacher (e.g., acknowledging students' backgrounds as important, maintaining a civil classroom environment, encouraging cooperative learning), cooking ethnic foods, emphasizing the history of marginal groups in American history, and critically analyzing the structure of society (e.g., racism, stereotypes, forced immigration). Perhaps the most surprising response came from almost one-fourth of the respondents (19 of 80). They reported that they had neither seen nor implemented any multicultural practices during their student teaching.

The third questionnaire item asked, "When you think about multicultural education, what are two questions you would like answered before you begin teaching?" Seventy-five percent of these responses were sorted by Goodwin into two categories: concerns with instruction and concerns with self. Concerns with instruction revolved largely around curriculum issues. For example, students asked such questions as, "How can I incorporate all cultures within the curriculum?" "What is enough?" "How does one include everyone in class?" and "Is there evidence to show that multicultural education benefits the students it serves?" A separate but related issue concerned the very nature of multicultural education. Twelve percent of the responses indicated some degree of uncertainty about what multicultural education is with such questions as, "How will I define multicultural education?" and "What is multicultural education?" With respect to personal concerns, students had questions about such issues as how much autonomy they would have in formulating a multicultural curriculum, whether peers or administrators would approve of such teaching, what kinds of mistakes or misconceptions they needed to avoid, and how they should handle racially charged situations.

It is tempting to conclude that the diversity of conceptions and concerns about multicultural education displayed by Goodwin's sample of preservice teachers simply mirrors the diversity of conceptions and opinions expressed in the literature. While there may be some truth to that analysis, it ignores some disturbing aspects of these students' responses. For the most part, these teachers-to-be saw multicultural education as a stand-alone component that one plugs into the curriculum at appropriate times (e.g., Black History Month, Cinco de Mayo, Hanukkah). And the scope and duration of these components depends largely on the presence of such external constraints as attitudes of others, available material, and recognized holidays or events. But the leading proponents of multicultural education (such as James Banks, Christine I Grant, Daniel Gollnick, and Sonia Nieto) argue that teachers should constantly integrate such lessons into the curriculum because all individuals benefit from understanding the characteristics of different groups of people and because a multicultural orientation leads one to adopt generally effective teaching practices. Thus, well trained teachers do not wait to be told to develop multicultural lessons or limit the scope of the lessons to the available resources, but recognize that multicultural practices are an inherent and constant part of what they do with their students every day.

If Goodwin's sample of preservice teachers are representative of that population, then those of us in the teacher education business who agree with the writings of Banks, Sleeter, Grant, etc., have much work to do.

Carolyn M. Evertson

continued from page 27

that these notions of management are not compatible with building the kinds of learning communities we are trying to build where students have a stake in their own learning and their own school community. Still, there are some enduring principles: Teachers need to make expectations explicit to students, both the academic and the social. There needs to be a level of trust so that students can have ownership and a stake in what occurs in the classroom.

MWER:How has diversity and our changing social contexts affected learning and classroom management?

CME: If learning is the goal, we cannot only deal with, but must celebrate diversity, if we understand it as different paths to the same goal. Concerning social contexts, may students in schools today have competing agendas. Our society and our schools are in a real dilemma about how to teach students who don't want to be there, and the problem of keeping order for the students who do want to be there.

MWER:Do you see teachers as being victims of the system and their enviroment?

CME: I don't think teachers are victims, but they are often the ones who must be the most responsive and the most creative in working through individual problems with students.

MWER:How can this be changed?

CME: I think we have to begin to rethink our old notions of authority and whose responsibility it is...who has it, who doesn't, who has voice, who can articulate that voice and the vision. We have to find ways to work together with students, parents, and community to build a shared vision of what kind of schooling we want and what kind of schooling we need.

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Transition to Graduate Level Elementary Teacher Preparation: A Formative Analysis

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Abstract

This study provides a formative evaluation of the transition from a traditional four-year bachelor's level elementary education program to a fifth year master of education (M.Ed.) program on a regional campus of a major research university. For a three-year period the newly instituted M.Ed. program ran concurrently with the bachelor's certification program while this traditional program was being phased out. Comparisons of teaching placement rates for both groups indicated the M.Ed. group had a placement rate twice as high as the bachelor's graduates. Other factors analyzed include enrollment patterns, student profiles, staffing and cost implications, and relationships with teachers and administrators in the schools providing field and student teaching placements.

In June, 1992, seventeen students assembled as a cohort group to enter an intensive five-quarter Master of Education (M.Ed.) program at The Ohio State University—Newark (OSU-N). Their meeting marked the beginning of the transition from undergraduate to graduate level elementary teacher preparation on this regional campus.

The *purpose* of this study was to examine the impact of this transition and to provide a formative evaluation of the first three years of the new M.Ed. program. Factors examined included enrollment patterns, student profiles, staffing implications including cost, relationships with teachers and administrators in K-8 schools in which field and student teaching placements were made, and teaching placement data from those completing the program.

The College of Education at The Ohio State University became a charter member of the Holmes Group in 1986 when a majority of the education faculty committed themselves to the concept of graduate level teacher preparation as promoted by this consortium of approximately one hundred major research institutions (Holmes Group, 1986). The elementary education program area was the first in the college to phase out its undergraduate teacher certification program. Replacing it was a post-baccalaureate certification program referred to as the M.Ed. certification program. A bachelor's level pre-certification degree program, similar in premise to pre-med programs, also commenced at this time. This pre-certification program was to be one avenue for admission into the fifth year M.Ed. program which would, upon completion, meet state department of education certification requirements. Students possessing a bachelor's degree in any field would also be eligible to apply to the M.Ed. program, so the M.Ed. program could begin before graduates of the pre-certification program had matriculated. On the Newark campus, the M.Ed. program began in 1992, as did the pre-certification program. The last group of students already enrolled in the traditional four year undergraduate elementary education certification program would not graduate until December of 1995. Thus for a three year period the new M.Ed. program would run concurrently with the traditional program.

The concept of post-baccalaureate teacher preparation is not new. California abolished the undergraduate degree in education in 1962 (Tierney & McKibbon, 1993). Although the debate regarding teacher preparation has been heated in this era of educational reform, there are few studies comparing graduates of different programs (Andrew, 1991). What literature exists has produced mixed results, as tremendous variation exists among programs labeled 'alternative' as well as among those termed 'traditional.' Some alternative programs are 'quick-entry' programs, in which candidates are placed into classrooms as interns without prior teaching experience. Academic preparation may be as brief as a one summer seminar. In such programs, certification requirements are substantially altered. In a review of such quick-entry routes, Darling-Hammond and Goodwin (1993) reported teachers thus prepared have difficulty with many aspects of teaching and are less able to meet student needs. The weight of research indicates that fully prepared teachers are in fact more highly rated and more successful with students than are teachers without full preparation for licensure (Darling-Hammond & Goodwin, 1993, p. 32).

Two recent studies lend further support to this position. In a study relating time of preparation to teaching concerns, a relationship was found between a candidate's degree of success in making the transition from student to teacher and time in preparation (Marso & Pigge, 1995). In another study comparing undergraduate and graduate student teachers, McDermott, Gormely, Rotherberg, and Hammer (1995) found the thinking of undergraduates with ex-

tensive field experience prior to student teaching had advanced through more stages of teacher development than the thinking of graduate students without prior field experience.

A few studies have compared graduates of traditional undergraduate programs with post-baccalaureate programs similar to the OSU-N program. Shannon (1993) reported post-baccalaureate graduates at one institution had higher scores on all four sections of the NTE than did graduates of the traditional four year program. Candidate satisfaction with the post-baccalaureate program was high, as were performance evaluations of teaching after graduation. MacDonald, Manning and Gable (1994) reported that 'schools and youth benefit significantly' from the expertise of graduates of a post-baccalaureate teacher education program at another institution. They further reported a higher than average incidence of job placement for these graduates. Another ten year longitudinal study comparing graduates of a traditional four year program with graduates of a five year post-baccalaureate program at one institution reported that significantly more post-baccalaureate graduates entered and stayed in teaching than graduates of the four year program. The post-baccalaureate graduates were also more satisfied with their career and rated the quality of their program higher than did the four year graduates (Andrew,1991).

In a study of the post-baccalaureate elementary education preparation program on the OSU main campus that was the prototype for the M.Ed. program instituted on the Newark campus, Loadman and Gustafson (1990) found the opposite regarding teacher placement of post-baccalaureate graduates. A follow-up study of graduates during the 1987-89 academic years from both post-degree and traditional programs found a higher percentage of the post-baccalaureate program graduates were not teaching. The graduates of both programs were similar, however, on self and program ratings, teaching satisfaction, and views of teaching.

In a study analyzing the marketablilty of Homes program graduates from several institutions, Young and Jury (1994) noted that the extra investment these students had made in time and effort did not produce an employment advantage over graduates of traditional certification programs. The Holmes program graduates' chances of receiving an interview for a teaching position were no greater than the chances for traditional graduates.

Among these conflicting findings there is one area in which there appears to be a general consensus. A review of alternative programs has indicated that one of the key features contributing to their success is collaboration with K-12 educators during all phases of the program, beginning with initial program planning. MacDonald, Manning and Gable (1994) discussed the value of having master teachers as an integral part of the instructional and field placement facets of the program and the willingness of collaborating school districts to place and hire the alternative program graduates. Shannon (1990) reported that the successful alternative program at Virginia Wesleyan University was developed after extensive consultation with local school districts and an assessment of their needs. Young and Jury (1994) recommended that principals be apprised of the advantages associated with Holmes graduates and that candidates as well as programs be aggressively marketed.

Data and Analysis

Student admission records were examined to determine M.Ed. candidates' undergraduate degrees and other demographic information. Personal inventories completed by students admitted into the program provided information on their former work and educational history, in addition to personal information indicating their status as parents, prior involvement in working with children, etc. As candidates progressed through the program, advising reports provided information on their academic progress and field placement evaluations by both their supervisors and cooperating teachers indicated their progress in classroom experience and practice teaching. After completion of the M.Ed. program, placement office records and data obtained by personal communication with the graduates have been used to determine their success in securing teaching positions.

Reactions of teachers and administrators to the M. Ed. program were obtained from a variety of sources. Minutes from the quarterly elementary education advisory committee consisting of educators from OSU-N and from all seven school districts in which field and student teachers are placed recorded concerns and questions school district personnel voiced regarding the program. A log of concerns raised by teachers supervising M.Ed. students in field and student teaching placements was kept by the researcher who supervised M.Ed. students in these placements. The researcher also conducted focused interviews with sixteen selected cooperating teachers of students in both the traditional undergraduate program and the M.Ed. program. In the interviews, perceptions on the level of preparedness of the student teachers and comments about the teacher education program in general were solicited.

For the demographic and personal inventory data obtained on students, descriptive statistics are available; for the interview data, field notes, and meeting minutes, a thematic strategy of data analysis was employed in which similar responses were clustered.

Results

Student Profile

OSU-N draws a large proportion of non-traditional students who are older than the typical undergraduate, including many who have had extensive work experience and many who are parents. The group of M.Ed. students beginning the program from 1992 through 1994 were similar to the undergraduate education population for these factors. The proportion of males in the two programs was also similar, at approximately 25% for both groups.

Of the forty-four students who entered the M.Ed. program between June 1992 and June 1994, two clusters emerged. One group consisted of twenty-six students, or approximately 60% of the total, who were recent college graduates still in their twenties. Some of these students had originally planned to major in education but were discouraged from doing so by parents, counselors, and peers. This group tended to have less experience with children than the second cluster of students that emerged. This second cluster of eighteen students, equally divided in age between their thirties and forties, consisted of students who were in the process of switching careers and/or parents who had been out of the work force raising children. Although this second group had more experience with children than the first group, it was not necessarily in an instructional capacity. Undergraduate degrees of the M.Ed. students were wide-ranging but tended to cluster in the humanities as opposed to science and technology fields. Over a quarter of the M.Ed. students' undergraduate degrees were in psychology, sociology, and criminology. Nine of their degrees were in English, Communication, and Journalism. Six had degrees in the Sciences, followed by four each in the Arts, Business, and Home Economics. Three had degrees in History and Political Science, and two had General Studies degrees.

Job Placement

Though the M.Ed.'s and undergraduate students shared certain characteristics, including having been taught by the same teaching methods instructors and placed in the same district's schools for their field and student teaching experiences, there was a marked difference in their rates of placement in teaching positions upon graduation. During the 1992-93 academic year, seventeen M.Ed. students received their teaching certificates and nine found permanent K-8 teaching positions immediately upon graduation. Of forty-five graduates from the traditional four-year bachelor's program during the same year, fourteen found placements. Data from the second and third years of the M.Ed. program continue to reflect this trend. During the 1993-94 year, 66.6% M.Ed.'s found teaching positions compared to 18.4% of the undergraduates, as only twelve of sixty-five graduates from the bachelor's program secured positions. In the most recent year (1994-95) from which data is available, the M.Ed. graduates still have the advantage in securing teaching positions. Of fourteen graduates in 1995, seven found teaching positions (50%). Among seventy undergraduates, only eighteen are employed as teachers (25%).

An initial explanation for this difference in job placement rates was that the M.Ed. students may be less place-bound than undergraduates, and therefore they may have accepted positions in a wider geographic area having greater teacher demand. In analyzing the teaching position locations of both groups, however, no differences were noted in the percentages of students from either the traditional four-year program or M.Ed. program in accepting out-of-state positions. The overwhelming majority of positions (more than 92%) have been secured in central Ohio for both groups.

Enrollment Patterns

When OSU-N embarked on the M.Ed. program, total education enrollment increases were expected and did materialize during the three years during which the two teacher education programs ran concurrently. It was projected, however, that enrollment would decrease and stabilize after the students in the traditional baccalaureate program had graduated. This has not been the case. After three years of M.Ed. enrollment in the mid-teens, enrollment for the 1995-96 academic year has increased dramatically. Forty-six students began the M.Ed. program in 1995, more than the first three years put together. This necessitated the formation of two cohort groups with over twenty students each. About half of the students in the program this year are among the first graduates of the pre-certification program, and the other half are similar to the M.Ed. students enrolled in the first three years in the program, having degrees in other fields. Projected enrollment for the 1996-97 academic year is at least as high as enrollment for the current year. An additional thirty-six students will have graduated from the pre-certification program by spring of 1996 and will be eligible to enter the M.Ed. program in June of that year. Another thirty students with degrees in other fields have made initial contact with the education advisor to seek admission into the program at that same time. It is conceivable that there would be enough students to begin three M.Ed. cohorts for the 1996-97 academic year, but staffing and space constraints would make the addition of a third cohort impossible. Even with two cohorts currently enrolled, resources are strained and teaching loads have been maximized.

Staffing Implications

The transition to the M.Ed. program has created two minor staffing problems. Because it is a master's level program, all faculty and student teaching supervisors for the program must possess a terminal degree. In the undergraduate program, doctoral students or retired school district personnel with master's degrees had been hired for many part time positions and contributed very positively to the teacher education program. Because these persons do not possess a terminal degree, they can no longer teach or supervise in the M.Ed. program. Finding qualified faculty who possess a terminal degree has been difficult. Cost implications also are a factor as persons with Ph.D.'s are paid at a higher level than those possessing only a master's degree.

A second staffing problem relates to the M.Ed. curriculum. Certain courses from other College of Education departments are part of the M.Ed. core curriculum, whereas in the undergraduate elementary program being phased out, core curriculum was derived solely from the department that housed elementary education. Faculty eligible to teach these core courses reside on the main campus. It has been difficult to find main campus faculty who are willing to drive an hour to the Newark campus to teach these required M.Ed. courses. It has sometimes been necessary to compromise the M.Ed. curriculum sequence in order to find a main cam-

pus faculty member to teach a required core course. For example, a course on pedagogical methods had to be postponed from autumn to spring quarter, with the result that M.Ed. students did not study classroom management methods until they were several weeks into their student teaching experience.

Cost Implications

In addition to the added cost of hiring faculty with terminal degrees, costs for advising M.Ed. students are also higher. Advisors need time to analyze undergraduate transcripts of prospective M.Ed. students with degrees in other fields to determine which courses will transfer and which courses in addition to those in the M.Ed. curriculum will be required for certification. M.Ed. students can opt to take a master's exam or to complete a master's project. Those choosing the project option require an advisor and significant advising time since the M.Ed. curriculum, unlike the M.A. curriculum, does not include any research methods courses.

Another issue related to cost has yet to be resolved. An oft repeated argument for abandoning undergraduate teacher preparation in favor of graduate level preparation was that M.Ed. students would be subsidized by the state at a higher level than that for undergraduates, thus any loss of subsidy from the possibility of lower enrollments would be offset . The subsidy model is complex and is administered differently on regional campuses, so that no clear figures as to this purported advantage have yet been substantiated.

Cooperating Teachers' Reactions to the Program

Although the M.Ed. program at OSU-N could be broadly labeled an alternative program, it is clearly not a quick-entry program. Depending on their undergraduate degree, most M.Ed. students must take course work in addition to the five full-time quarters of study the program requires in order to meet certification requirements. The program also meets all state department of teacher preparation requirements for hours in field placements and student teaching. Yet a frustrating and unforeseen aspect of the M.Ed. program has been a negative reaction and attitude from some cooperating teachers and administrators. Some teachers have admitted their resentment over the fact that M.Ed. students can receive a master's degree in education in a little over a year's time without ever having been a classroom teacher. Their resentment is not quelled by the explanation that the M.Ed. degree is a practitioner's degree and not identical to a master of arts degree. One teacher commented while being interviewed that the M.Ed. students can receive a master's degree more easily than a practicing teacher can. Her perception was echoed by others.

In assessing the abilities of M.Ed. students as compared to undergraduates in field placements, some cooperating teachers tended to be more critical of M.Ed. students than they were of undergraduate students who had also been placed with them. One comment by a cooperating teacher illustrates an almost defensive attitude regarding M.Ed. students: 'They came in looking for what was wrong [with our teaching].' This perception of the abilities of the M.Ed. students by cooperating teachers, which is also shared by some school district administrators, is opposite from the perception of the M.Ed. faculty, who feel the M.Ed. students have generally been stronger both academically and in their student teaching than the undergraduates.

Discussion and Recommendations

The transition to graduate level teacher certification is now complete on the OSU-N campus. The last group of students to receive their certification in an undergraduate program have graduated. Many areas of concern that were discussed as the transition began never materialized. Other emerging aspects of implementing the M.Ed. program were totally unforeseen. One major concern involved sustaining an adequate enrollment in both the pre-certification and M.Ed. program. There was some trepidation that the cost of the fifth year of the program at the significantly higher graduate tuition level would send prospective students to other institutions where they could attain teacher certification in four years instead of five. Instead of having a marginal number of students at both the pre-certification and M.Ed. levels, enrollments for the current year are more than twice the projections, and at least as many students are expected for both programs for the next academic year as well. These higher than projected enrollments in the initial teacher certification programs have produced another concern, that of adequately staffing the Newark campus M.A. education program, as faculty loads are filled by M.Ed. courses alone.

Another concern involved M.Ed.'s prospects of finding teaching positions upon completing the program. There was concern that because M.Ed. graduates would command a salary at the master's level, administrators would prefer to hire graduates from bachelor's degree programs. This has not been the case. For each of the three years during which the undergraduate program ran concurrently with the M.Ed. program, M.Ed. graduates have had a substantial advantage in securing teaching positions, even though both groups were equally place-bound. Over the last three years, about one quarter of the traditional four year program graduates have secured permanent teaching positions, compared to over half of the M.Ed. graduates.

A possible explanation for the negative attitudes regarding the M.Ed. students and program expressed by some of the cooperating teachers may relate to the fact that school personnel from the area served by the Newark campus were not involved in any aspect of the planning for the M.Ed. program. The program was conceptualized and first implemented on the main campus. The Ohio State University has had a long-standing policy that requires regional campuses to offer education programs identical to those on the main campus. In developing the M.Ed. program, this 'one program, five campus' policy did not allow for collaborative input from Newark-area educators. Instead, the Newark campus adopted the program designed for main campus needs. School district personnel with no ownership in the

891

program may have found it easy to criticize. Furthermore, not being involved in program development may make it more difficult to recognize advantages a new program might offer.

An unresolved but critical concern is whether or not the M.Ed. program is attracting better qualified students and preparing higher quality teachers. This question will be the subject of ongoing research involving longitudinal studies comparing the success in teaching and career paths of graduates from the traditional program with M.Ed. graduates

Many other possibilities for continuing evaluation of the M.Ed. program exist. Will M.Ed. students continue to have a high placement rate into teaching positions? 1995 data from the Ohio Department of Education indicate that only 16% of graduates attaining elementary certification from Ohio institutions during the 1994-95 academic year found teaching positions in Ohio. The M.Ed. rate has been considerably higher than this figure. Even more important than teacher placement is the question of teacher quality. How successful will the M.Ed. teachers be? What paths will their careers take? Will they remain in the education field? Will they be more likely to engage in action research? To take continuing education course-work? These and other questions will need to be answered.

Further investigations can be conducted comparing the two different academic backgrounds of students that now will comprise each M.Ed. cohort. Beginning with the 1995-96 academic year, approximately one half of the forty-six students entering the M.Ed. program matriculated from the pre-certification program, while the remaining half hold degrees in fields other than education and therefore were not enrolled in the pre-certification program. These two groups can be compared both while enrolled in the M.Ed. program and after they have completed it and enter the teaching field.

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Motivation in Education

continued from page 11

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892

Integrated Curriculum: Its Use, Initiation and Support in Midwestern Schools

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Abstract

Survey data based on a random stratified sample of 400 schools were utilized to compare schools that use integrated, interdisciplinary or multidisciplinary curriculum (IC) with those that do not (No IC). This study explores the extent and type of use of IC, how school principals rate IC success, and differences between IC and NoIC schools in terms of their characteristics, and teacher involvement and support across different school levels. Selected data tables and analyses are presented and discussed.

Integrated curriculum is central to the contemporary vision of truly effective schools designed to accommodate learner diversity. That vision comes from what we know about teaching and learning. Abundant research supports the assertion that students learn best when instructional tasks require them to use knowledge in meaningful ways (e.g., Bereiter & Scardamalia, 1985; Resnick, 1987; Scardamalia & Bereiter, 1991; Leinhardt, 1992). Integrated curriculum units designed to involve students in complex thinking processes such as problem solving, decision making, investigation, experimental inquiry or invention provide ideal vehicles for students to develop and meaningfully use knowledge (Bransford, Vye, Kinzer, & Risko, 1990; Marzano, 1992; Roth, 1990).

Middle level educators have for more than two decades called for reform of their educational programs. Progress has been made in changing middle school climate and institutional features (Beane, 1991). On a national basis, 57% of the schools responding to a survey conducted by the National Association of Secondary School Principals (Valentine, Clark, Irvin, Keefe, & Melton, 1993) reported using interdisciplinary instructional teams; and yet, these and other middle level scholars contend that curricular reforms have taken a back seat to organizational changes (p. 62, Valentine et al.). Beane (1993), however, questions the validity of this perception. He reports that most of the interdisciplinary teams in middle schools begin curricular planning by identifying a theme or topic and then asking what each subject area can contribute to that topic. He argues that this type of planning and the resultant curriculum would more correctly be labeled multidisciplinary or even multi-subject.

Following the pilot of our survey instrument, we decided that for the initial data collection for this study, the terms integrated, interdisciplinary, and multidisciplinary, would be used synonymously. We have followed the same convention in this article.

Study Purposes and Methods

The *purposes* of this research are: (a) to ascertain the extent and type of use of integrated, interdisciplinary, or multidisciplinary curricula (IC); (b) to determine how these curricula are initiated and supported at the building level; and (c) to explore relationships between implementation of integrated curricula (IC), instructional supervision, teacher involvement in decisions, and principal beliefs about knowledge and learning. Four hundred elementary, middle school/junior high, senior high, and other schools were selected as components of a stratified, random sample representative of the population of public and accredited private schools in the state of Missouri. These schools were then surveyed using items designed to collect both qualitative and quantitative information.

Of the 400 schools comprising the total sample, 174 returned useable surveys, for a response rate of forty-four percent. Responses to survey items were tallied and analyzed using descriptive statistics. Analysis of variance was used to determine significance of differences between means on selected items. Open-ended survey responses were analyzed using a constant comparative method to develop emergent themes and categories (Lincoln & Guba, 1985; Miles & Huberman, 1984). These themes and categories were developed separately by each of the investigators. Data sets were then compared for similarities and the categories collapsed to eliminate redundancy. Follow-up interviews were then conducted with a purposeful sample of principals to gather more in-depth information about instructional supervisory practices supportive of integrated, interdisciplinary, or multidisciplinary curriculum and instruction; to probe unclear item responses; and to ascertain principals' epistemological beliefs.

This paper presents base-line data specifically collected in response to the following seven questions:

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1. What are the characteristics of schools reporting some level of use of integrated, interdisciplinary, or multidisciplinary curriculum (IC schools)?
2. How do such schools differ from those reporting no use of integrated, interdisciplinary, or multidisciplinary curriculum (Non-IC schools)?
3. What is the type of use (e.g., at the awareness or experimentation level to use by three or more teacher teams) of integrated, interdisciplinary, or multidisciplinary curriculum in elementary, middle, senior high and other Midwestern schools?
4. How do principals rate the level of success of their teachers' use of IC?
5. How was the use of IC initiated in the schools? And, who initiated the use?
6. How is the use of IC supported in the schools?
7. Do IC schools and Non-IC schools differ with regard to teachers' involvement in decision making? If so, how?

Results

Extent of use

Descriptive statistical analyses of data indicate that the extent of use of integrated curriculum across the K-12 schools in Missouri is somewhat less than the 50.8% reported in Illinois (Irvin, 1993), and is also less than might be expected from the 57% of middle schools reporting involvement with interdisciplinary teams on a national basis (Valentine et al., 1993). Use of integrated curriculum was highest at the elementary level (65.12%), and lowest at the high school level (30.3%), with the other schools reporting 30.56%. (see Table 1) This percentage of use of integrated curriculum in Missouri middle schools was somewhat surprising, and may represent a much lower level of use than in middle schools across the nation; or, as is more likely, it may simply mean that the reported 57% (on a national basis) involvement with interdisciplinary instructional teams is not synonymous with use of integrated curriculum.

Table 1

Numbers and Percentages of Schools using Integrated, Interdisciplinary, or Multidisciplinary Curricula

	Total	IC Schools	Percent
Elementary	86	56	65.12
Middle School	19	7	36.84
High School	33	10	30.30
Other	36	11	30.56
All Schools	174	84	48.28

School Size

Schools using integrated, interdisciplinary, or multidisciplinary curriculum were generally larger than those who didn't. This was particularly true for the high schools and middle level schools. See Table 2.

Table 2

Means and F-values of School Sizes

	Mean IC School	Non-IC School	F
Elementary	426.20	368.67	1.993
Middle School	776.00	442.00	9.533**
High School	1215.80	620.57	12.684**
Other	208.27	232.88	.268
All Schools	517.74	403.49	5.372*

*p<.05 **p<.01

School Type

Sample schools were asked to describe themselves in terms of inner city, suburban, rural, or other. In this instance, other was exemplified by terms like: city, urban, affluent, etc. IC schools and Non-IC schools were then compared to ascertain characteristics. Among all schools using integrated curriculum, the largest percentage (45.12%) described themselves as rural, followed by suburban (32.93%), then inner

Table 3

Comparison of IC and Non-IC Schools by School Type

School Classification	School Type	IC Schools	Non-IC Schools
Elementary Schools	Rural	41.07	76.67
	Suburban	32.14	10.00
	Inner-City	17.86	13.33
	Other	8.93	0.00
Middle Schools	Rural	57.14	81.82
	Suburban	42.86	0.00
	Inner city	0.00	18.18
	Other	0.00	0.00
High Schools	Rural	22.22	75.00
	Suburban	66.67	15.00
	Inner-City	11.11	10.00
	Other	0.00	0.00
Other Schools	Rural	80.00	100.00
	Suburban	0.00	0.00
	Inner city	20.00	0.00
	Other	0.00	0.00
All Schools	Rural	45.12	83.72
	Suburban	32.93	6.98
	Inner City	13.41	9.30
	Other	8.54	0.00

894

city (13.41%), and finally, Other (8.54%). Non-IC schools, on the other hand, were predominantly rural (83.7%) with fewer than 10% describing themselves as urban (9.4%) or suburban (6.98%), and none in the other type. Table 3 presents these data.

Student Socio-Economic Status

Across all schools, the greatest number (46.77%) described their student populations as primarily low socio-economic status (SES), the second largest number (41.94%) described their students as primarily middle SES, while only 11.29% had high SES students. Among all Non-IC schools, a much larger percentage (65.96%) described their students as low SES, while smaller percentages enrolled middle (31.91%), and high (2.13%) SES students. Table 4 presents a summary of these data. It should be noted that those schools that do not use any form of integrated curriculum are more likely to be populated with students from lower socio-economic status families as well as more likely to be rural.

Table 4

Comparison of IC and non-IC Schools on Socio-Economic Status

School Classification	Socio-Economic Status	IC Schools	Non-IC Schools
Elementary Schools	Low	45.95	73.68
	Middle	37.84	26.32
	High/Affluent	16.22	0.00
Middle Schools	Low	42.86	80.00
	Middle	42.86	20.00
	High/Affluent	14.29	0.00
High Schools	Low	44.44	44.44
	Middle	55.56	44.44
	High/Affluent	0.00	11.11
Other Schools	Low	55.56	64.29
	Middle	44.44	35.71
	High/Affluent	0.00	0.00
All Schools	Low	46.77	65.96
	Middle	41.94	31.91
	High/Affluent	11.29	2.13

Level of Teacher Involvement with IC

Table 5 presents the numbers of teachers by school classification using integrated, interdisciplinary or multidisciplinary curriculum. This Table seems to indicate that in schools where integrated curriculum is used, such use is not confined to isolated classrooms, but rather is a more widely used, and hence, accepted way of structuring teaching and learning experiences. For example, at all levels, more than fifty percent of schools, regardless of classification, report from 2 to 10 teachers involved in the use of integrated curriculum. While this might seem discouraging at first glance, knowing that a ratio of 30 students to 1 teacher is not uncommon repudiates that impression. When the data for IC schools from Table 1 is taken into consideration, it would seem that, in all classifications except high school, more than half the faculty and students are involved in the use of integrated curriculum.

Table 5

Percent of Teachers Who Use Integrated Curriculum

Number of Teachers	2-5	6-9	10-14	15-20	21-30	>30
Elementary	33.9	19.6	12.5	19.6	14.3	
Middle School	42.9	14.3	14.3	14.3	14.3	
High School	30.0	40.0	10.0	20.0		
Other	72.7	27.3				
All Schools	39.3	19.0	13.1	15.5	10.7	2.4

Type of Teacher Use

Schools were queried about the type of teacher use of integrated curriculum. See Table 6. These data seem to show that a relatively large percent (69.5%) of teacher involvement with integrated curriculum in Missouri schools is through a team approach rather than use by individual teachers in isolated classrooms. However, while 51.2% of all schools report three or more teams of teachers using integrated curriculum, this extent of use is more prevalent at the elementary and middle school levels, with 61.1% and 71.4% respectively. High Schools (70.0%) and other schools (72.8%) report that their use of integrated curriculum involves individual experimentation or only one or two teams involved with initial experimentation which could give credence to an earlier assertion, especially at the high school level, that a subject centered approach stultifies attempts at curriculum integration (Beane, 1991).

Table 6

Type of Teacher Involvement

	Elem	Middle	High	Other	All Schools
Little awareness or experimentation.	14.3%	10.0%	9.1%	3.7%	
Individual teachers aware/some experimentation.	25.9%	50.0%	27.3%	26.8%	
1-2 teams involved in initial experimentation.	13.0%	14.3%	20.0%	45.5%	18.3%
3 or more teams use IC with parts of some curricular units.	25.9%	42.9%	10.0%	9.1%	23.2%
3 or more teams use IC with more than one complete unit.	35.2%	28.6%	10.0%	9.1%	28.0%

Level of Success with IC

Principals rated the level of success of their staffs' use of integrated curriculum. These ratings were collected via a four-point scale ranging from 1 (low) to 4 (high). Table 7 presents these mean ratings by school classification. In spite of the high schools reporting a large number of staff using integrated curriculum, their success rating is low. This may be due to the fact that even with the current high interest in and experimentation with block schedules at the high school level, most high schools are still not structured in ways that facilitate implementation of an integrated curriculum. The prevalent six or seven period high school day in which students move from classroom to classroom at 50-55 minute intervals means that any success at all with integrated curriculum would entail heroic efforts on the part of both staff and students. More middle school principals wrote comments about levels of success than did principals of other school categories. For example, several wrote that it was, Too early to determine success or that they were, Unsure about the criteria for judging success. These responses suggest that perhaps middle level principals tended to be a bit more cautious about rating the level of success of their use of integrated curriculum than did their colleagues at other school levels. Many of these comments came from principals of schools with longer histories of involvement with integrated curriculum.

Table 7

Principals' Ratings of Level of Success with Use of Integrated Curriculum

Mean Elementary	3.07
Middle School	2.36
High School	2.10
Other	2.91
All Schools	2.88

Initiation of Use of IC

Principals were asked to describe how integrated curriculum had been initiated in their schools. All the IC schools reported that principals or central office administrators were involved at some level in large percentages of the initiation efforts for using integrated curriculum. For example, initiation was by teachers or teams of teachers and the principal in 45.7% of the schools, and by the principal in 12.3% of the schools. Classroom teachers initiated use in 41.2% of schools. Three IC schools reported other initiators of use, however. One said that their school became involved with integrated curriculum after a district cadet teacher introduced the ideas to the faculty; one reported initiation of use after the superintendent and school board directed them to begin use; and one school reported that they initiated use of integrated curriculum as a result of consortium meetings with local college faculty. Among the elementary schools, principals were involved in all of the initiation efforts.

In 80% of the schools the principal, along with one or more teachers, initiated the use of integrated, interdisciplinary or multidisciplinary curriculum; in only 20% of the elementary schools use was initiated by the principal alone. For middle schools reporting use of integrated curriculum, principals were involved in initiation efforts with one or more teachers in most of the schools (62.5%). In 12.5% of the schools, the principal initiated the use. In one case, this initiation occurred after the principal attended several state department meetings where integration was being encouraged. Classroom teachers initiated the use of integrated curriculum in 25% of the middle schools. From analysis of the total sample of IC schools, the following patterns appear to be emerging. For example, elementary and middle schools reported that principals were highly involved in initiation of use efforts, while high schools and other schools reported dramatically less involvement by the principal in initiation efforts. Teachers appear to be the initiators of curriculum integration efforts without the involvement of principals in increasing numbers as we look at schools from the elementary to high or other classifications of schools.

Support Mechanisms for Use of IC

Principals were asked to describe the methods they used to support integrated, interdisciplinary, or multidisciplinary curriculum. These data show that in addition to the expected support mechanisms in use by principals (i.e., common planning time, staff development, and material resources), several less frequently reported support mechanisms were also being used. For example, policy statements about integrating curriculum and instruction, and initiation and encouragement of continuous dialogue about student learning. More specifically, among all IC schools, principals reported the following support mechanisms: frequent classroom visits, observations of classes, supportive conferences with teachers, listening to their success stories and problems, provision of instructional materials and supplies, scheduling faculty meetings for teacher sharing and problem-solving, cross-referencing Missouri Mastery Achievement Test (MMAT) objectives with units as they are being developed, use of outside consultants to help in developing curriculum units, participation in a research group with a nearby university, forming a partnership with another school to establish a focus committee for curriculum integration, establishing dialogue structures (e.g., study teams, informal forums, etc.) to ensure faculty talk about learning, and encouragement of teacher use of whole language as a vehicle for integration and of cooperative learning as an instructional model that facilitates integration.

Principals also reported staff development on integrative techniques, common planning times within the work day, encouragement of interdisciplinary teams, promoting discussion of means and ideas at regularly scheduled meetings (twice per month), encouraging innovative thinking,

adopting policy statements supportive of integrated curriculum, and establishing an acceptance of experimentation within the school culture as ways of supporting the use of integrated curriculum. Middle school principals also reported establishing supplemental team planning times, block scheduling, and teacher involvement in shared decision making as support mechanisms for integrated curriculum. High school principals also reported encouragement of department chairs to plan discussions about integrated curriculum at department meetings, consideration and adoption of 8-block schedules, and informal promotion of the idea(s) during staff evaluation conferences as mechanisms used to initiate integrated curriculum.

Teacher Involvement in Building Decisions

Considerable research shows that the amount and type of teacher involvement in decisions at the building level can be used as an indicator of teacher empowerment, and hence, may serve as a proxy measure of the progress of efforts to implement innovations such as integrated curriculum (e.g., Husband & Short, 1994; Valentine et al., 1993). In order to ascertain the type and level of teacher involvement in decision making processes in IC schools and Non-IC schools, principals were asked to categorize the nature of teacher involvement on sixteen items representing seven categories believed by the researchers to be important. Principals the level and type of teacher involvement in these decisions by responding to a five-point Likert-type scale. Mean responses for each of the 16 items for both IC schools and Non-IC schools were calculated and an analysis of variance was used to determine the significance of differences between means across all schools. Seven of the 16 items yielded significant differences between means across all schools. See Table 8. Principal responses to this series of items indicate that teachers appear to be more involved in building decisions in schools that use integrated, interdisciplinary, or multidisciplinary curriculum than they are in Non-IC schools.

Table 8

A Comparison of Differences Between Mean Responses of IC Schools and Non-IC Schools on Teacher Involvement in Decision Making

Mean Item	User	Non-User	F
Selection of support staff.	2.167	1.435	13.384****
Selection of teaching staff.	2.154	1.557	9.230***
Evaluation of support staff.	1.582	1.287	3.761*
Budget development at the building level.	2.455	1.931	4.946**
Budget allocation at the building level.	2.169	1.557	8.938***
Staff development content.	4.141	3.871	2.867*
Staff development format.	4.091	3.667	6.082**

*p<.10 **p<.05 ***p<.005 ****p<.0001

Discussion, Implications, and Conclusions

This study presents the results of the first phase of a broad-based research effort being conducted by researchers at the University of Missouri-Columbia. These data seem to indicate that in schools where an integrated approach is used, such use is not confined to isolated classrooms, but rather is a more widely used, and hence, accepted way of structuring teaching and learning experiences. Teachers in schools that use integrated curriculum tend to have greater involvement in decision processes than do teachers in Non-IC schools. Information about the initiation of use of integrated curriculum and about support mechanisms consciously developed and used by principals are also reported.

The base-line data reported in this paper are important to the development of both regional and state policy regarding integrated curriculum. Given that the state of Missouri, like neighboring states, is currently in the process of developing curriculum frameworks, and that these curriculum frameworks emphasize integrated or interdisciplinary curriculum, reports describing current conditions and practices should assist policy makers as well as practitioners seeking guidance for future actions regarding use of integrated curriculum in the schools. Non-IC schools are mainly rural (83.7%) and have student populations with large numbers of low SES students (65.96%). This may be attributable to the fact that in rural areas school leaders are subjected to less pressure from parents and community members to adopt innovations that may be readily accepted and adopted in suburban or urban schools. This highly rural nature of the Non-IC schools may also reflect the fact that staff development is simply less available to school staff in rural areas. But, for whatever reason, given the high percentage of rural and low SES schools that are NOT involved with any type of integrated curriculum, policy maker attention should be drawn to the potential requirement for provision of special assistance to these types of schools if they are expected to be successful in implementing the newer research on teaching learning.

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continued on page 44

Voices in Education

Marlene Schommer, Wichita State University

Veteran leaders of education, as well as some new leaders, were directly asked by the author to respond to the following two questions. Their Reaction and Impact estimates are summarized below. The "leader" is identified at the end of the responses.

1. a. What are the two most critical issues in K - 12 education that should be addressed in the next five years?

b. Why do you think they are the most critical?

"In educational research, the greatest crisis we have is our current ignoring of intelligence (or g). Especially this is true for school learning from k to 12th grade. Ignoring intelligence, we are suppressing the idea of readiness. We are collapsing tracking and ability grouping, and programs for the gifted and retarded. Pretending that intelligence does not exist changes not one thing about its underlying importance and explanatory power."

Ellis B. Page
Duke University
Durham, North Carolina

"Continued inequality in schools and the notion of the standards as panacea in education."

"The biggest societal problems we face are those stemming from inequalities, and schools are reflective of these societal shortcomings. Certainly there are blatant shortcomings in most urban schools regarding basic equipment, curricular innovation and adequate facilities. Vouchers have been trumpeted as a solution to these problems, but in actuality are only advantageous for middle or upper class parents and students. Though city schools may in some instances have more per pupil expenditures, that money is not being spent on teaching and learning so much as on administration and compliance.

Money is clearly the key to eradicating inequalities in schools, but money well spent. In addition, there must be changes/demands that poorer students economically (disproportionately students of color) are not consigned to poorer teachers and lower expectations. Teacher-led curricular change cannot only go on in suburban schools. Urban teachers need support and training to shape programs for their students. These needed innovations require financial, community and administrative support, yet these are being undermined by the other current panacea—the national standards movement. There are few positives that can outweigh the negatives of this—the money, time and effort expended, the logical next step of a national curriculum, and the erosion of support for teacher professional abilities. It is unfortunate that the Clinton agenda has merely extended the Bush agenda. The knee-jerk response to lower standardized test scores, unflattering international comparisons, and a "newly discovered" ignorant public is to impose standards without examining the substance of the claims of educational shortcomings."

Murry R. Nelson
The Pennsylvania State University
University Park, Pennsylvania

" In my opinion, the two most pressing problems we face in education today are directly related to one another. Many teachers lack a clear and appropriate vision of the meaning of academic success in their classrooms because of a lack of preparation with respect to the important achievement targets. And for this and other reasons, we are a national faculty that is unable to develop or implement quality assessments of student achievement in our classrooms on a day-to-day basis. As a result, instruction is carried out in the absence of dependable information about student needs and communication about student achievement often arises from inaccurate assessments of that achievement. We are a national faculty, administrative staff and policy-setting team unschooled in the basic principles of sound assessments, and students suffer great harm as a direct result of this huge gap in our collective professional competence."

Richard J. Stiggins, Director
Assessment Training Institute
Portland, Oregon

'Two important issues are high-stakes testing and inequalities in opportunity to learn. Testing concerns me for a number of reasons: restricted paper-and-pencil measures that are heavily biased toward linguistic and logical performance; imposition of measures from outside the classroom; and,

898

perhaps worst of all, the widespread belief among teachers that their own judgments about student performance are less trustworthy than test results. As regards inequalities, the disparity in per-pupil expenditures between most large, urban districts and most small, suburban ones is shocking. Jonathan Kozol calls this phenomenon 'rigging the game.' "

Ruth Garner
Washington State University
Vancouver, Washington

"The most critical issue is turning schooling into education at any level and in any culture, however segmented."

"Because creativity is the quality which will facilitate the ongoing transmutation of consciousness from conformity into developed self-awareness."

David Tiedeman
Vista, California

"The two most critical issues facing educators are implementing student-centered instruction and giving students access to new technologies, regardless of whether they attend large urban schools, or small well-financed suburban ones. Most technology is not value-neutral, and like other tools of educators (e.g., activities, curricula, and teaching environments) can elicit hot emotions. Hot emotions toward technology, for instance, may be the initial gatekeeper of change in educational environments. For those teachers who believe technology is desirable, that belief can be an inducement to try new teaching strategies, but for those who have negative beliefs, teachers may avoid even cursory engagement of technology."

Mark Gillingham
Washington State University
Vancouver, Washington

"Two factors impede all educational reform efforts. First, many parents have abdicated their responsibility for oversight of their children's education. Thus, children are often loners in an educational system that cannot express the love, concern, and direction that only parents can provide. This is not the fault of the educational system; governmental bureaucracies are not established to impart personal love, concern, or direction; but to provide a fairly homogeneous service to a diverse population. It is the fault of parents; it is parents who must reclaim an educational vision as a mandatory aspect of rearing children. Parents can and—if any reform is to be successful—must assume more responsibility for taking what schools can provide and ensuring that the results are maximized in their children's best interests.

The second critical issue that must be addressed is nested within the first. That is, even if parents assume greater responsibility for the education of their children, their actions will lack efficacy if they must be embedded in the current educational system. Thus, a critical issue for reform over the next five years is the ability of the educational system to reform tself. That may be an unreasonable outcome to expect, given the constraints within which teachers must currently practice. The stifling of creativity through the frowning upon risk, the overwhelming burdens of bureaucratic regulations, the constraining context of unionization, the propensity of bureaucracies to serve their own interests first; all of these elements work against the current system being able to induce many students to high accomplishment, much less everyone to excellence.

There are emerging models that aspire to mitigate these influences; the innovative vision of the Edison Project schools comes to mind as one example. For real educational reform—not cosmetic reform—to take place, this kind of vision must catch the attention of teachers, administrators, and parents on a broad scale."

Gregory J. Cizek
The University of Toledo
Toledo, Ohio

"Developing interprofessional support systems for students in our schools. Evidence abounds that support provided to young people by traditional families is becoming more the exception than the rule. Violence at home, economic deprivation, contact with drug users, unsafe neighborhoods, gang-related activity, and nutritional problems challenge increasing numbers of children. When these young people come to school, they bring with them problems going well beyond the service capacity of traditionally trained school professionals. It is critical that the notion of the full social service school move beyond glitzy discussions at national professional meetings to a model that is widely implemented. Absent a sea change in the daunting array of social problems facing young people today, tomorrow's learners must be provided with opportunities to experience education in a setting that attends, at once, to physical health, mental health, personal safety, and traditional learning needs."

"The middle class must be convinced that public schools are serving its children well. Over a decade of negative press regarding the quality of the nation's schools has begun to undermine the traditional confidence of the middle class in public education as the bridge to a "better life" for its daughters and sons. Unless this trend is reversed, broad-based political support for public education may erode . . . an eventuality certain to reduce funding levels and to result in poorer school quality than we have today. In time, the public schools could end up providing highly mediocre services to children of those families too poor to opt out of the public system. This would be a terrible blow for a system of public schools that, historically, has both educated large

numbers of people well and served as a useful "social glue" that has bonded Americans, regardless of social class, in a common set of shared experiences."

David G. Armstrong
Texas A&M University
College Station, Texas

"While there is much rote learning in schools throughout the world, in some countries I find great emphasis on problem solving, applications of principles, analytical skills, and creativity. Such higher mental processes are emphasized because it is believed that they enable students to relate their learning to the many problems encountered in day-to-day living. These abilities, which are retained and used long after the individual has forgotten the specifics of the subject-matter taught in the schools, are regarded as essential characteristics needed to continue learning and to cope with a rapidly changing world. Some also believe that higher mental processes are important because they make learning exciting.

In these countries, subjects are taught as methods of inquiry into the nature of science, mathematics, the arts, and the social sciences. These subjects are taught as much for the ways of thinking they represent as for their traditional content. Much of this learning makes use of observations, reflections on observations, experimentation with phenomena, and the use of firsthand data and daily experiences as well as primary printed sources. All of this is reflected in the materials of instruction, the learning and teaching processes used, the questions and problems used in quizzes, formative testing, and final summative evaluation.

In sharp contrast to these teaching methods, teachers in the U.S. use textbooks that rarely pose real problems. The textbooks emphasize specific content to be remembered, and give students little opportunity to discover underlying concepts and principles, and even less opportunity to attack real problems in their environment.

I believe that the higher mental processes should be taught as early as the first grade, where ideas can be related to day-to-day situations in the lives of the children. Even at that level, the higher mental processes can make learning exciting, constantly new, even playful."

Benjamin Bloom
The University of Chicago

900

Integrated Curriculum

continued from page 41

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continued from page 20

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Assessing Understanding

continued from page 14

ability to make inferences, understand consequent events, recognize novel instances, and detect gross errors are necessary for transfer of learning, critical thinking and problem solving by adults (Wilson, 1987). More research is needed to see if children comprehenders have similar abilities.

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901

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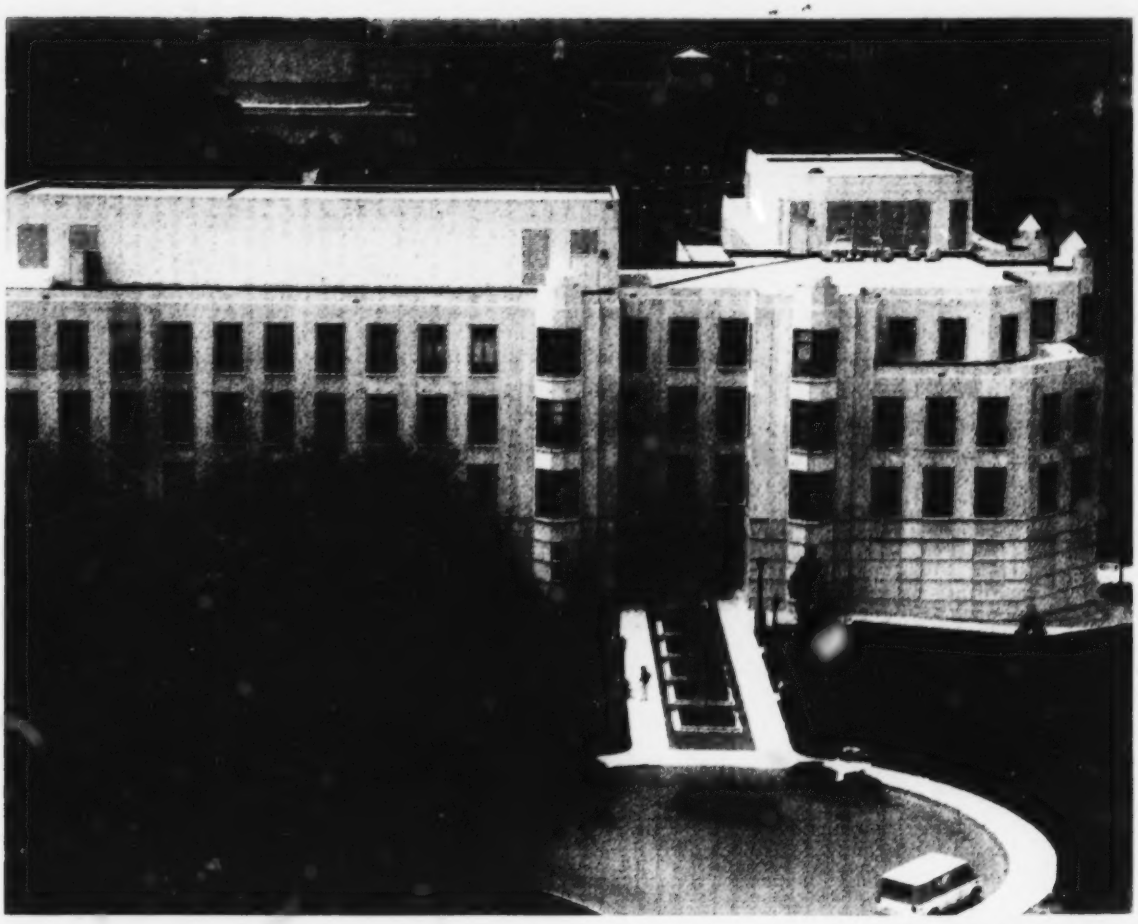

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Founded in 1908, the Indiana University School of Education now occupies the Wendell W. Wright Education Building, a new structure designed to demonstrate uses of multimedia technology in teaching and learning. The Wright Education Building has been equipped through the generosity of AT&T, Thomson Consumer Electronics, Steelcase Inc., and the School's alumni and friends. Indiana University's School of Education is a leader in the use of distance education, interactive television instruction, and technological innovation.

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

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Program Committee, Board of Directors, Association Council 2
Conference Proposal Reviewers 3
General Information 4
Events and Highlights 4
How to Get to the Conference 5
Conference Schedule:
Wednesday
Workshop Sessions 6
Featured Speaker 7
Thursday
Council and Division Meeting 8
Featured Speaker 9
Research Sessions 9
Call for Nominations 11
Featured Session 14
Friday
Exhibits 16
Research Sessions 16
Roundtables 18
Luncheon Featured Speaker 19
Hotel Registration Form 26
Meeting Registration Form 27
President's Reception 30
Saturday
Research Sessions 31
Presidential Address 33
Subject Index 37
Presenter Index 39
Hotel Map 50

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GENERAL INFORMATION

Registration: Everyone participating in or attending the MWERA annual meeting must be registered. Those planning to attend are encouraged to pre-register for the conference, workshops, and to make hotel reservations as soon as possible **(pre-registration and hotel reservations must be received by September 10, 1996).** Registrations mailed after Sept. 10 may not be received in time for processing, and on-site payment in the form of cash or personal checks will be expected. If double payment is later determined, a refund will be issued. On-site registration and packet pick-up will be available on the 14th Floor of the Holiday Inn Mart Plaza at the following times:

Wednesday, Oct. 2, 11:00 a.m.- 4:00 p.m.
Thursday, Oct. 3, 8:00 a.m. - 4:00 p.m.
Friday, Oct. 4, 8:00 a.m. - 4:00 p.m.

Name tags should be worn to all sessions (including workshops) and must be worn for admission to the conference luncheon on Friday.

Membership provides reduced conference registration fees and a subscription to the MWERA official publication, the Mid-Western Educational Researcher. Those attending the conference are encouraged to join. Conference presenters must be paid members for 1996.

Selected MWERA publications are available through pre-registration. These include the Directory of MWERA members for $7, the MWERA 1996 Meeting Abstracts for $4 paper, and $3 IBM computer disk. These publications may not be available at the conference unless ordered through pre-registration. If they are available at registration, cash or checks will be accepted.

MWERA lapel pins are available again this year. The pins are your way to show others that you support MWERA, and they add to your attire. These stylish pins were made available to us at a special discount, and we have passed along that discount to you.

This year's **Exhibit Hall** will feature publishers and others providing materials and services to educators on Friday, in the 14th Floor Lobby West. We have added a sharing table for you to bring job announcements, fill-out mentor forms, and share other information which helps all of us. Plan on stopping by between 9 am and 4 pm.

EVENTS AND HIGHLIGHTS

Dr. Herbert Walberg will be the featured speaker during our Wednesday evening session (Session 12). Dr. Walberg will be presenting his recent research in a session entitled, "Perspectives on Educational Productivity." Dr. Carolyn Evertson will join in an informal discussion. You may join this conversation Wednesday evening from 8:00 until 10:00 p.m. in the Sauganash Ballroom East.

MWERA Association Council will meet from 8:00 to 9:50 a.m. on Thursday morning in the Western Stage House (Session 13). All Association Council members are urged to attend.

New Member Welcome takes place from 8:00 to 8:50 a.m. Thursday in the Steamboat Hotel (Session 14). Connie Bowman, will chair this informal session. All MWERA members and conference participants are welcome.

Division Meetings will be held from 9:00 until 9:50 a.m. on Thursday morning (Session 15). All MWERA members are encouraged to attend as plans are made for the 1997 conference.

Dr. Carolyn Evertson will present our keynote address from 10:00 to 11:00 a.m. on Thursday in the Sauganash Ballroom East (Session 16). Dr. Evertson's address is entitled, "What Does It Mean To 'Teach for Understanding?'"

New editors of the Mid-Western Educational Researcher, Deborah Bainer, Gene Kramer, and Richard Smith, will hold a **"Meet the Editors" session** on Thursday from 3:00 to 4:20 p.m. in the Mansion House (Session 33). Those interested in learning about publishing opportunities are encouraged to attend.

The Cracker Barrel Social will take place from 5:00 to 7:00 p.m. Thursday in Button's, a private room off of Mad Anthony's Lounge on the 15th floor (Session 41). This informal event offers a chance to relax, mix, and mingle. A cash bar will be provided.

MWERA General Business Meeting will be held from 8:00 to 9:20 a.m. on Friday in the Sauganash Ballroom East (Session 42). All MWERA members are urged to attend.

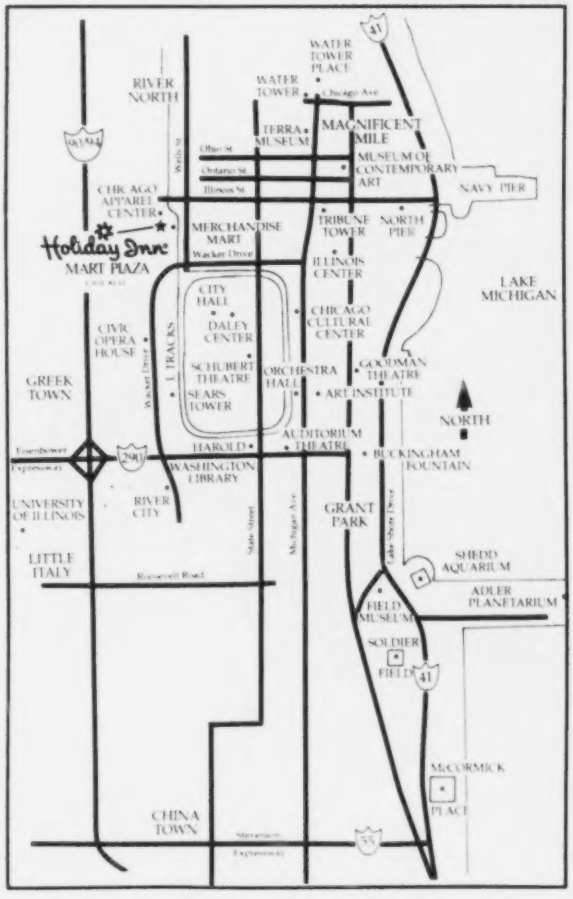
Dr. Mary Kennedy will be the featured speaker at the conference luncheon Friday in the Sauganash Ballroom East from 11:00 a.m. to 1:20 p.m. (Session 53). Dr. Kennedy's address, "Stability and Change in Education," will examine developments and trends in educational research. The luncheon is free to all paid conference attendees.

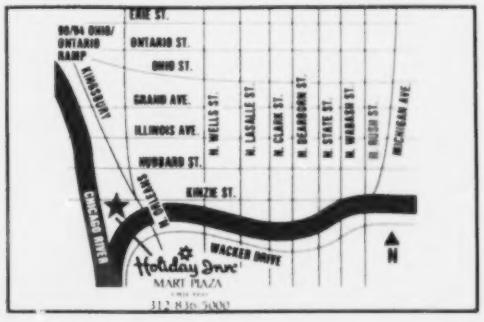
President Greg Marchant will host the **President's Reception** on Friday evening from 9:00 p.m. to midnight in the Wolf Point Grill on the 15th Floor (Session 72). This year's reception will feature a theme ("Parrot Head"/Jimmy Buffett), so come and enjoy the fun. Beer, wine, soft drinks, and complimentary hors d'oeuvres will be served.

The **MWERA Conference Program Committee** will meet with Vice-President Kim Metcalf and Vice-President Elect Tom Parish on Saturday from 8:00 to 9:20 a.m. (Session 73). All program chairs and co-chairs are encouraged to attend and discuss the 1996 conference and make plans for the 1997 conference.

Greg Marchant will make his **Presidential Address** on Saturday morning from 9:30 to 10:50 a.m. in the Steamboat Hotel (Session 81). Dr. Marchant will be discussing issues and obstacles for teacher education in his address entitled, "Top Ten Problems in Teacher Education."

Getting to the Conference
Holiday Inn Mart Plaza
350 North Orleans Street
Chicago, Illinois 60654
(312) 836-5000





O'Hare Airport to the Holiday Inn (3 Options)

1. **Take a CTA train** to downtown for about $1.50. Catch the train in the basement of Terminal 3. Take an A or B Line. Get off at the Clark/Lake station. Transfer to the Brown Line (Ravenswood), and take this to the Merchandise Mart.

2. **Take the Continental Airport Bus** for $13.50 one way or $25.00 round-trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.

3. **Take a cab** for around $28.00 one-way. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7-10:00 a.m., 3-7:00 p.m.) the ride could take an hour or more. Tips average 15-20%.

Midway Airport to the Holiday Inn (3 Options)

1. **Take a CTA train** to downtown for about $1.50. Catch the train at the east end of the airport. Get off at the Clark/Lake station. Transfer to the Brown Line (Ravenswood), and take this to the Merchandise Mart.

2. **Take a Continental Airport Bus** for $11.50 one-way or $19.50 round trip. No reservations are required from the airport. See the agent at the booth for tickets.

3. **Take a cab** for around $25.00 one-way. See O'Hare information above regarding time.

Driving and Parking Downtown (3 Options)

1. **From the South, East, or West:** Take I-90/94 (Dan Ryan). Exit at Washington Street East (Exit 51C), turn right on Washington. Go to Wacker Drive and turn left. Make another left at Orleans Street and cross over bridge. The hotel is on the left-hand side.

2. **From I-88:** I-88 connects to 290 (Eisenhower). Exit at Franklin Street. Follow Franklin until it turns into Orleans Street (just over the river). The hotel is on the left-hand side.

3. **From the North, I-90/94 (Kennedy Expressway):** Exit at Ohio Street. Go to Wells Street (3rd light). Turn right, cross the river and turn right on Wacker Drive. Go 1 block, turn right on Orleans, and cross bridge. The hotel is on the left-hand side.

The Holiday Inn Mart Plaza sits atop The Apparel Center. Take the elevators on the first floor of The Apparel Center to the 15th Floor Hotel Lobby.

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Wednesday October 2, 1996

Conference Registration
11:00 a.m. - 4:00 p.m.
14th Floor, East Lobby

WORKSHOP SESSIONS	12:00 p.m. - 5:00 p.m.	
Session 1 **Western Stage** **12:00 - 3:00** **(Fee: $5)**	**How Do We Assess Inquiry-Based Science Education?** This workshop provides hands-on experience and guidance in using authentic assessment techniques in science. Participants will also learn how to use a newly developed CD-ROM computer package which simulates scientific discovery in seven environmental settings.	Isadore Newman, *University of Akron*; John Hirschbuhl, *University of Akron*; Rowena Hubler, *Ohio Department of Education*; Jim Jackson, *University of Akron*; Kathy Sparrow, *Akron Public Schools*
Session 2 **Mansion House** **12:00 - 3:00** **(Fee: $5)**	**Process and Framework for Developing Innovative Teacher Education Programs** This hands-on workshop will guide participants in beginning the process of developing innovative teacher preparation programs. Participants will be helped to create a framework for such development, concrete ideas on how to continue, and a continuing support system.	Kenneth Addison, Beverly Otto, Vivian Walkosz, Sharon McNeely, Janet Fredericks, Patricia Schutt, Joanne Frey, Edward Odisho, Janet Bercik, *Northeastern Illinois University*
Session 3 **Bull's Head Room** **12:00 - 3:00** **(Fee: $15)**	**What's New in Multiple Comparison Procedures** The main purpose of this workshop is to introduce educational researchers to new developments in multiple comparison procedures (MCPs). All presentations and examples will be provided in a notebook which will include a diskette containing the computer programs.	Robert Barcikowski, Elizabeth Randolph, Ronald Elliott, Suzy Green, George Johanson, *Ohio University*
Session 4 **Lake House** **12:00 - 4:00** **(Fee: $10)**	**Introduction to Structural Equation Modeling (SEM) with Amos** This workshop will provide an introduction to SEM in the Windows environment. Modern advances in structural modeling and statistical methods will be presented with fully documented examples distributed as handouts and on diskette. Some experience in multiple regression or factor analysis is recommended.	Werner Wothke, *SmallWaters, Inc.*
Session 5 **Columbian House** **1:00 - 2:30** **(No Charge)**	**Children in Stress and the Adults Who Care for Them** This workshop is intended for those who work with children and their parents. Participants will learn about the nature of stress in children's lives, how to identify common stressors and signs of stress, methods of helping children cope with stress, and available resources.	Lisa Cutter, Mary McMullen, *Indiana University*
Session 6 **Fork's House** **1:00 - 4:00** **(Fee: $5)**	**Making Math Multicultural Using the Computer as a Tool** The objective of this workshop is to provide educators with methods of using the computer and math concepts to help children appreciate cultural differences. Hands-on problem-solving activities and handouts will be used. Participants may bring a diskette for copying programs.	Mian Muhammad Yusuf, *Weber State University*
Session 7 **American House** **1:00 - 4:00** **(No Charge)**	**A Five-Point Framework for Setting Up Instruction to Meet Student Learning Styles** The workshop will include a variety of activities to help participants learn more about their own and their students' learning styles, implications of learning style for instruction, and examples of how the five-point framework can be used to design more effective instruction.	Tim Green, *Indiana University*; William Green, *Andrews University*

Wednesday October 2, 1996

WORKSHOP SESSIONS **12:00 p.m. - 5:00 p.m.**

Session 8 **Columbian House** **2:45 - 3:30** **(Fee: $10)**	**Understanding the World Wide Web--Search Engines and Indexes** This workshop is intended to provide education professionals with an overview of the World Wide Web. Participants will learn how the World Wide Web works and how to use Web-based search engines and search indexes to find specific information.	Abbie Howard Brown, *Indiana University*
Session 9 **Mansion House** **3:30 - 5:00** **(No Charge)**	**Designing and Implementing a New Teacher Education Program: University-Based and School-Based** This workshop is designed to provide participants with a realistic view of what can be achieved with a limited budget to provide support for new and beginning teachers. Specific examples and techniques will be provided.	Janet Bercik, *Northeastern Illinois University*; Judith Henning, *East Maine School District 63 (IL)*
Session 10 **Bull's Head Room** **3:30 - 5:00** **(No Charge)**	**"Clustering": A Tool in Creative Writing; A Power Tool in Research** This workshop will provide participants the opportunity to explore "clustering" as a possible interview tool for conducting their research. Its purpose is to introduce the "clustering" technique, demonstrate its application in data collection, and to consider its value and utility for research.	Irene Karpiak, *University of Oklahoma*

FEATURED SPEAKER
Session 12 **8:00 pm. - 10:00 p.m.** **Sauganash Ballroom East**

Perspectives on
Educational Productivity
Herbert J. Walberg
University of Illinois at Chicago

Notwithstanding recent optimistic views of American educational accomplishments, the U.S. lags behind other countries in many achievement measures. The most recent comparisons of participating industrialized countries show that U.S. students declined in reading literacy during the period from 1970 to 1990 while inflation-adjusted educational spending rose substantially. U.S. students, moreover, appear to make the least reading progress from ages 9 to 14 among those of participating Organization for Economic and Cooperative Development countries even though U.S. costs are highest. For these reasons, the organization, productivity, and consumer-orientation of U.S. schools requires review and reform.

Research Professor of Education and Psychology at the University of Illinois at Chicago, Herbert J. Walberg is past chairman of the technical Committee on International Education Indicators for the Organization for Economic Cooperation and Development, and a founding member of the National Assessment Governing Board. Professor Walberg is one of three U.S. members of the International Academy of Education.

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Thursday October 3, 1996

Morning Hospitality Service
7:00 a.m. - 8:00 a.m.
14th Floor, West Lobby

Conference Registration
8:00 a.m. - 4:00 p.m.
14th Floor, East Lobby

BUSINESS/DIVISION MEETINGS

Session 13 **8:00 a.m. - 9:50 a.m.**

MWERA Association Council Meeting
Greg Marchant, President
8:00 a.m. - 9:50 a.m.
Western Stage

Session 14

New Member Welcome
Connie Bowman, Chair
8:00 a.m. - 8:50 a.m.
Steamboat Hotel

Session 15

MWERA Division Meetings
9:00 a.m. - 9:50 a.m.
Rooms listed below

Division A
Columbian House
Larry McNeal, Chair
A. William Place, Co-Chair

Division B
Fork's House
Jay C. Thompson, Chair
V. Ellen Goodman, Co-Chair

Division C
American House
Steven Benton, Chair
Marlene Schommer, Co-Chair

Division D
Bull's Head
Thomas S. Parish, Chair
Bruce G. Rogers, Co-Chair

Division E
Sauganash Ballroom West
Eddie E. Glenn, Chair

Division F
Sauganash Ballroom West
Louise E. Fleming, Chair
Michael Penrod, Co-Chair

Division G
Lake House
Clara New, Chair
Joan Thrower Timm, Co-Chair

Division H
Mansion House
John W. Fraas, Chair
Kathleen Sparrow, Co-Chair

Division I
Sauganash Ballroom West
Richard M. Smith, Chair
Pamela A. Kahlich, Co-Chair

Division J
Sauganash Ballroom West
Gloria T. Sandoval, Chair
Wayne VanZomeran, Co-Chair

Division K
Steamboat Hotel House
Carmen Giebelhaus, Chair
Mary Bendixon-Noe, Co-Chair

Thursday October 3, 1996

FEATURED SPEAKER
Session 16 **10:00 a.m. - 11:00 a.m.** **Sauganash Ballroom East**

What Does It Mean to "Teach for Understanding"?
Carolyn M. Evertson
Peabody College, Vanderbilt University

Teachers' and students' voices are notably absent in the current debate about educational reform, yet they are the most central participants. Dr. Evertson will use information from a long term study of new teachers to highlight some of the dilemmas inherent in changing teaching practices.

Professor of Education and Chair of the Department of Teaching and Learning, Peabody College, Vanderbilt University, Carolyn M. Evertson has published numerous books, handbook chapters, and articles about teacher education, learning to teach, creating and managing learning environments and the culture of the classroom, including two books, *Learning from Teaching*, and *Student Characteristics and Teaching* with Jere Brophy. Her texts for preservice teachers, *Classroom Management for Elementary Teachers* and *Classroom Management for Secondary Teachers* (co-authored with Edmund Emmer, Barbara Clements, and Murray Worsham) are soon to be published in their fourth editions.

RESEARCH SESSIONS **11:00 A.M. - 12:30 P.M.**

Session 17	**Defining Roles and Realities in Teacher Education**	**Paper Session** (Division K)
Western Stage	Finding Parts Within the Theater of Education: Roles Developed by Preservice Teachers During Three Field Experiences	Jacqueline Collier, *Miami University (OH)*
Chair/Discussant Jay Price *University of Wisconsin-Stevens Point*	Early Clinical Experiences: How Do Teacher Candidates Spend Their Time?	Elizabeth Wilkins-Canter, Audrey Edwards, *Eastern Illinois University*
	Reform in Middle-Level Education: Roles, Relationships, and Reality	Linda Morrow, Kaye Martin, *Muskingum College*
Session 18	**Improving Student Teaching and Preservice Teacher Education**	**Forum** (Division K)
Steamboat Hotel	The Dilemmas of Evaluating Student Teacher/Interns	Jennifer Fager, *Western Michigan State University;* Marcy Reisetter, *University of Nebraska-Lincoln*; Suzanne Timmer, *Western Michigan State University*; Thomas Dellario, *Loy Norrix H.S.*; Jana Ellingson, *Flandreau H.S.*
Chair Carmen Giebelhaus, *University of Dayton*	Lenses on Reflection: Enhancing the Professional Development of Preservice Teachers	Adrian Rodgers, *Ohio State University*; Annette Thorson, *Ohio Dominican College*; Debra Mallonee, *Fairborn City Schools* (OH); Heather Bogge, *Ohio State University*

Thursday October 3, 1996

RESEARCH SESSIONS	11:00 a.m. - 12:20 p.m.	
Session 19 **Mansion House** **Chair** Dierdre Jackson, *Bradley University* **Discussant** Donna Waechter, *University of Akron*	**Socialization of Children**	**Paper Session** (Division E)
	The Relationship of Locus of Control and Self-Esteem with Academic Achievement of Middle Adolescence	Stacey Pfannenstiel, Linda Bakken, *Wichita State University*
	A Comparison of the Role of Mexican-American and Anglo-American Family Members in the Socialization Process	Linda Lopez, Minami Hamilton, *Western New Mexico University*
Session 20 **Columbian House** **Chair** Gerald Nunn, *Educational Services, Inc.* **Discussant** Christine Fox, *University of Toledo*	**Recent Research Based on Diverse Perspectives**	**Paper Session** (Division D)
	Gender, Program, and National Differences in Spatial Visualization	K.H. Chen, Ayres D'Costa, *Ohio State University*
	Racial and Ethnic Differences in the Effect of Family Background on Educational Attainment	Susan McElroy, *Carnegie Mellon University*
	Models Comparing Estimates of School Effects Based on Cross-Sectional and Longitudinal Designs	Minsuk Shim, *University of Illinois*
Session 21 **Bull's Head** **Chair** Marlene Schommer *Wichita State University* **Discussant** Anthony Ambrosio *Wichita State University*	**Cognitive Interventions for Academic Learning**	**Paper Session** (Division C)
	Effect of Topical Frequency and Position on Recall of Text	Linda Pallock, John Surber, *University of Wisconsin-Milwaukee*
	Analogies and Reconstruction of Mathematical Knowledge	Gerald Fast, *University of Wisconsin-Oshkosh*
	Investigating the Advantages of Constructing Multidigit Numeration Understanding Through Oneida and Ojibwa Native Languages	Judith Towne-Hankes, *University of Wisconsin-Oshkosh*
	A Mnemonic Intervention for All Seasons	Yooyeun Hwang, Joel Levin, *University of Wisconsin-Madison*; Willy Renandya, Akademi Bahasa, *Semarang, Indonesia*
Session 22 **Fork's House** **Chair** Elizabeth Johnson *Eastern Michigan University*	**"Doing History": Some Tips on Obtaining Job and Publishing Opportunities in the History of Education**	**Forum** (Division F)
	How to go about a job search; how to get published again and again; and how to keep a position once it is attained.	Louise Fleming, *Ashland University*; Michael Penrod, *Southeast Kansas Education Service Center*

Thursday October 3, 1996

RESEARCH SESSIONS **11:00 a.m. - 12:20 p.m.**

Session 23	**Higher Education Potpourri**	**Paper Session** (Division J)
Lake House	Literacy Practices of Undergraduate Teaching Assistants	M. Cecil Smith, *Northern Illinois University*
Chair Wayne Van Zomeren *NW Missouri State University*	What Experts Think About Statistics Education	Mark Earley, *University of Toledo*
Discussant Gloria Sandoval *Ohio State University*		
Session 24	**Preschool Issues**	**Paper Session** (Division G)
American House	The Peer Group Dynamics of Six Preschool Boys	Angela Baum, *Iowa State University*
Chair/Discussant Clara New, *University of Wisconsin-Parkside*	As Long as It's Developmentally Appropriate	Mandy Cole, *Miami University (OH)*

CALL FOR NOMINATIONS

The Nominations Committee of the Mid-Western Educational Research Association is accepting nominations for offices to be elected early 1997. Vice-President/Program Chair, Member-at-Large, and Association Council Members will be elected. Those nominated must be members in good standing. If you are interested or know of someone who is, please contact Greg Marchant, Department of Educational Psychology, Ball State University, Muncie, Indiana 47306 (e-mail: SlyNIN@ix.netcom.com).

Thursday October 3, 1996

RESEARCH SESSIONS	1:30 p.m. - 2:50 p.m.	
Session 25 **Western Stage** **Chair** Mary Sudzina, *University of Dayton*	**The Virtual Library**	**Invited Speaker** (Division K)
	A 3-D software program based on a library metaphor. The purpose of the software is to support undergraduate and graduate students as they study educational psychology and instructional design at a large midwestern university.	Molly Nicaise; Humphrey Loe, *University of Missouri-Columbia*
Session 26 **Steamboat Hotel** **Chair/Discussant** Karen Dutt *Indiana State University*	**Teacher Education: From Beginning to End**	**Paper Session** (Division K)
	The Relationship Between Pre- and Post-Preparation Development of Teaching Career Attitudes, Anxieties, and Confidence and Candidates' Success or Failure in Making the Transition to Teaching	Ronald Marso, Fred Pigge, *Bowling Green State University*
	Admission to Teacher Education: An Examination of University Standards	George Petersen, *Bowling Green State University*; Kathryne Speaker, *Center for Teaching Excellence*
	Prospective Teacher Educators Speak Out: Teacher Education Programs and Preservice Teachers	Joy McCullough, *Trinity Western University*
Session 27 **Mansion House** **Chair** Marilyn Grady *University of Nebraska-Lincoln*	**Legal, Finance, and Privatization Issues in Education**	**Paper Session** (Division A)
	Judicial Response to Discrimination in Education: The Case Study of the Non-Public Schools	Lyndon Furst, *Andrews University*
	Alternative Education Service Delivery Systems: An Examination of Choice and Privatization Options in the United States	Scherie Lampe, *University of Wisconsin-Oshkosh*
	Privatization - Policy Implications for Public Education	Daniel Raisch, *University of Dayton*
	School Referenda Success in an Environment of Fiscal Limitations	Randy Dunn, *Southern Illinois University*
	A History of Nebraska Public School Finance Law: 1867-1993	Harriet Gould, *University of Nebraska-Lincoln*
Session 28 **Columbian House** **Chair** Thomas Parish, *Kansas State University* **Discussant** Peggy Simpson, *University of Cincinnati*	**Important Ideas Regarding the Teaching of Statistics**	**Paper Session** (Division D)
	Comparison of Psychometric Characteristics of Instruments Used to Assess Attitudes Toward Statistics	Susan Cashin, Patricia Elmore, *Southern Illinois University*
	Thinking Critically About Statistics	Linda Lange, *Sacred Heart University*
	The Creation and Use of Videotaped Computer Tutorials for Research and Statistics Classes	Patricia Klass, *Illinois State University*

Thursday October 3, 1996

RESEARCH SESSIONS	1:30 p.m. - 2:50 p.m.	
Session 29 **Bull's Head** **Chair** Deborah Bainer, *Ohio State University-Mansfield* **Discussant** Ayres D'Costa, *Ohio State University*	**Educating the Professions Through School-Based Partnerships**	**Symposium** (Division I)
	Overview of School-Based Partnerships	Deborah Bainer, *Ohio State University-Mansfield*
	Professional Development of Resource Professionals Through Partnerships	Deborah Bainer, Christine Halon, *Ohio State University-Mansfield*
	Professional Development of Business Professionals Through Partnerships	Don Williams, *Ohio State University*
	Professional Development of Health Care Professionals Through Partnerships	Christine Halon, Deborah Bainer, *Ohio State University-Mansfield*
Session 30 **Fork's House** **Chair** Tom Vontz *Indiana University* **Discussant** Gloria Sandoval *Ohio State University*	**Learning Styles and Learning Characteristics in Higher Education**	**Paper Session** (Division J)
	Tutoring Needs and Locus of Control in College Students' Predictions of Test Results	Peter Brady, *Clark State Community College*
	Four Tasks in College: A Case Study of Student Motivation in an Introductory Course	Edmund Hansen, *Emporia State University*
	A Little Chaos in our Theories: Postseceondary Students with Invisible Disabilities	Jacqueline Rickman, *Western Illinois University*
Session 31 **Lake House** **Chair/Discussant** Linda Behar-Horenstein *University of Florida*	**Studies in Secondary and Post-Secondary Curriculum**	**Paper Session** (Division B)
	Curriculum Change in Indiana's School-To-Work Pilot Site High Schools	Theodore Kowalski, *Ball State University*; Susan Beerman, *Bloomington North HS (IN)*
	Measuring the Consistency of the Attitudes and Practices of College Composition Instructors	James Salzman, *Ursuline College*
	The Best Predictor Variables of Columbus Public Schools' Students' Performance on the Ohio Ninth-Grade Proficiency Test	Susanne Granoff, *Ohio State University* ;
	StarkNet Boundary Breakers	Mary Robinson, Kris Wyler, *Stark County Educational Service Center (OH)*
Session 32 **American House** **Chair** William Loadman, *Ohio State University*	**Examining Systemic Educational Reform in Ohio from Diverse Perspectives: Current Status, Projected Steps, and Ramifications for Statewide Reform of Public Education** A presentation of the current status and future projections on Ohio's Venture initiative from a number of organizations involved in overseeing the project.	**Symposium** (Division H) William Loadman, *Ohio State University*; Susan Streitenberger, *Ohio Department of Education*; Zana Vincent, *Central Ohio Regional Professional Development Center*; William Wayson, *Synergetic Systems*; Lenn Turner, *Worthington Estates Elementary School (OH)*

Thursday October 3, 1996

FEATURED SESSION
Session 33 **3:00 p.m. - 4:20 p.m.** **Mansion House**

Meet the NEW Editors
of
The Mid-Western Educational Researcher
Hosted by:
Deborah Bainer, *Ohio State University-Mansfield*
Gene Kramer, *American Dental Association*
Richard Smith, *MarianJoy Rehabilitation Hospital*

RESEARCH SESSIONS **3:00 p.m. - 4:20 p.m.**

Session 34 **Western Stage** **Chair** Jacqueline Collier, *Miami University (OH)*	**Publishing Student Evaluations of Teacher Performance: Debating the Issues** Live debate - *Resolved: That Classroom Teaching Evaluations be Published.* Issues and evidence that support the logic for and against publishing student evaluations.	**Forum** (Division K) Stephen Blatt, Carolyn Benz, *University of Dayton*; John Pohlmann, *Southern Illinois University*; Isadore Newman, *University of Akron*
Session 35 **Steamboat Hotel** **Chair/Discussant** Mary Ellen Schmidt *Ohio State University-Mansfield*	**Teachers as Adult Learners** Teachers' Professional Development: An Interview Study Adult Learning Principles: A Theoretical Framework for Comparing New Teacher/Faculty Induction Programs in Pre K-12 and University Settings Launching School Change Through Teacher Study Groups: An Action Research Project	**Paper Session** (Division K) Jay Price, *University of Wisconsin-Stevens Point* Patricia Koll, *University of Wisconsin-Oshkosh*; Lee Siudzinski, John Moore, *KauKauna School District (WI)*; Gregory Wypiszynski, *University of Wisconsin-Oshkosh* Heather Boggs, *Ohio State University*
Session 36 **Columbian House** **Chair** Donald Boyd, *Arkansas Special Education Resource Center* **Discussant** Bruce Rogers, *University of Northern Iowa*	**Validity Issues** Validation of Item Difficulty Models The Restoration of Critical Evaluation to Criterion-Referenced Standard Setting A Historical Comparison of Validity Standards and Validity Practices	**Paper Session** (Division D) Dimiter Dimitrov, *Kent State University* Gregory Stone, *The National Certification Corp.* Jessica Jonson, Barbara Plake, *University of Nebraska-Lincoln*
Session 37 **Bull's Head** **Chair** Nelson DuBois *SUNY-Oneonta* **Discussant** Beverly Dretzke *University of Wisconsin-Eau Claire*	**A Place for Ideas: A Description of Research Taking Place at the Center for Creative Learning and Research on Critical Thinking and Creativity** The creation of a center to facilitate a local community of learners for the purpose of nurturing and mentoring critical thinking and creativity. The environment strives to nourish and promote the creative process as well as celebrate the development of creative products.	**Forum** (Division C) Ronald Morgan, Marlea Edinger, *Loyola University of Chicago*

Thursday October 3, 1996

RESEARCH SESSIONS	3:00 p.m. - 4:20 p.m.	
Session 38 **Fork's House** **Chair** Zoe Barley, *Western Michigan University*	**Getting to Scale: Focusing on the Classroom** Issues and strategies to link large-scale reform efforts to focused change in the fundamental conditions of teaching and learning for students and teachers.	**Symposium** (Division H) Mark Jenness, Sharon Dodson, Cynthia Phillips, Rebecca Thomas, Cynthia Halderson, *Western Michigan University*
Session 39 **Lake House** **Chair/Discussant** Raquel Farmer, *University of Illinois*	**Teenage Pregnancy** Composing Ordinary Lives: Two Perspectives A Comparison of Adolescent Mothers in an Alternative Education Program: A Focus on Motivation and Persistence	**Paper Session** (Division G) Julie Biddle, *University of Dayton* Barbara Hutchison, *Moore Public Schools (OK)*; Joe Nichols, *Indiana University Purdue University-Fort Wayne*
Session 40 **American House** **Chair** Larry McNeal *Illinois State University*	**Sources of Miscommunication in Educational Reform** The Project for Educational Democracy: Creating a Forum for Citizen Participation in Education Elementary Teachers Engaged in Site-Based Management: Issues Pertaining to Communication and Shared Commitment to Reaching Established Goals Secondary Teachers Engaged in Site-Based Management: Issues Pertaining to Communication, Consensus, and Time Factors Secondary Teachers engaged in Block Scheduling: Issues Pertaining to Communication and Accountability in Educational Reform	**Paper Session** (Division A) Nicole Roberts, *University of Illinois* Lou Anna Moore, *Miami University (OH)* Catherine Keener, *Miami University (OH)* Beth Muskopf, *Miami Univeristy (OH)*

Cracker Barrel Social

Hosted by:
Gregory Marchant, MWERA President

5:00 p.m. - 7:00 p.m.

Button's
(off Mad Anthony's Lounge)

15th Floor

919

Friday October 4, 1996

Morning Hospitality Service
7:00 a.m. - 8:00 a.m.
14th Floor, West Lobby

Conference Registration
8:00 a.m. - 4:00 p.m.
14th Floor, East Lobby

BUSINESS MEETING
Session 42 **8:00 a.m. - 9:20 a.m.**

MWERA General Business Meeting
8:00 a.m. - 9:20 a.m.
Greg Marchant, President
Sauganash Ballroom East

Session 43

Exhibits
9:00 a.m. - 5:00 p.m.
14th Floor, West Lobby

RESEARCH SESSIONS **9:30 a.m. - 10:50 a.m.**

Session 44	**Changing Ideas, Pedagogy, and Curriculum**	**Paper Session** (Division K)
Western Stage	Students' Cognitive Representations of Practical Knowledge in Case-Based Teaching	Mark Mostert, *Moorhead State University*
Chair/Discussant Mary Campbell *Saint Xavier University*	A Case Study of the Implementation of a Nongraded, Multiage, Continuous Progress Program	C. Richele O'Connor, *Ohio State University*
	Issues and Influences that Shape the Teaching of U.S. History	Michael Romanowski, *Ohio Northern University*
Session 45	**Beginning Teachers**	**Paper Session** (Division K)
Steamboat Hotel	Developmental Stages of Preservice and Early Career TeachersThrough Needs Identification	Charles Runyan, Rozanne Sparks, David Hurford, Richard Lipka, *Pittsburgh State University*
Chair/Discussant Clara New *University of Wisconsin-Parkside*	Support for Beginning Teachers: Present Situations and Prospects	Lenore Wineberg, Beth Rost, *University of Wisconsin-Oshkosh*
	The Effects of Ethnicity of Candidate Name and Candidate GPA in Teacher Employment Screening Decisions	William Place, *University of Dayton*; Dazun Luo, *Ball State University*
Session 46	**Issues About Serving Students With Disabilities**	**Paper Session** (Division E)
Mansion House	Mainstreaming Revisited: Twenty Years Later	Daryl Wilcox, *Wayne State University;* Stanley Wigle, *University of Tennessee-Martin*
Chair/Discussant Thomas Midgette, *AWD/ADL;* Eddie Glenn, *Illinois State University*	Career Planning and Development for Adolescents with Disabilities	David Staton, *Iowa State University;* Dierdre Jackson, *Bradley University;* Thomas Midgette, *AWD/ADL*

Friday October 4, 1996

RESEARCH SESSIONS **9:30 a.m. - 10:50 a.m.**

Session 47 **Columbian House** **Chair** James Necessary, *Ball State University* **Discussant** Dennis Leitner, *Southern Illinois University*	**Improving Research Methodologies**	**Paper Session** (Division D)
	Return Rates: An Investigation of Mathematical Models	Bruce Rogers, *University of Northern Iowa*
	A Comparison of Follow-Up Strategies in Improving the Response Rate of Mail Surveys	Christine Fox, Lynne Johnson, *University of Toledo*
	Multiple Mark Items: An Alternative Objective Item Format	Mark Pomplun, Nita Sundbye, *University of Kansas*
	Are Open-Ended Items Performance Assessments?	Kim Rasmussen, *University of Toledo*
Session 48 **Bull's Head** **Chair** Wayne Gordon *Western Illinois University* **Discussant** Robbie Scholes *American College Testing*	**Testing the Effects of Classroom Intervention: Attitudes, Study Skills, and Critical Thinking**	**Paper Session** (Division C)
	The Effects of Classroom Environment Orientation on the Attitudes and Achievement of Developmental Readers	Tatia Beckwith, *Northern Illinois University*
	Exploring the Short-Term and Long-Term Effects of College Study Skills Courses on Performance in a General Psychology Course	George Overbey, *Kishwaukee College*; Sarah Peterson, *Northern Illinois University*
	Evaluating the Effects of a Critical Thinking Course on Critical Thinking Skills and Dispositions of Undergraduate Students	Julie Fisher-Robertson, Donna Rane-Szostak, *Northern Illinois University*
Session 49 **Fork's House** **Chair** Pamela Kahlich *KJ Learning Partners, Inc.* **Discussant** Gloria Sandoval *Ohio State University*	**The Context of Teaching in Higher Education**	**Paper Session** (Division J)
	Alternatives for Faculty Workload	Russell Higham, Edward Hines, *Illinois State University*
	A Survey of Administrators' Perceptions of Campus Climate and Related Issues	Abbie Robinson-Armstrong, *University of Toledo;* Mary Clark, *Wayne State University;* Lila Curry, *Bowling Green State University*
Session 51 **American House** **Chair** Isadore Newman *University of Akron*	**Standardized Testing: Don't Throw the Baby Out With the Bath Water**	**Panel Discussion** (Division H)
	An examination of the performance of students on standardized tests, with focus on tests used to measure intelligence.	Isadore Newman, Ronald McClendon, Celina Echols, *University of Akron*

Friday October 4, 1996

ROUNDTABLE PRESENTATIONS Session 52	9:30 a.m. - 10:50 a.m.	Sauganash Ballroom West
Table 1 Division A	Illinois Middle Level Grades Initiative: A Three Year Follow-Up	Frederick Dawson, Joyce Flood, *Illinois State Board of Education*
Table 2 Division B	Practicing What We Teach: One Approach to Modeling Best Practice	Joanne Frey, *Northeastern Illinois University*
Table 3 Division B	The Use of Professional Development in Establishing an Inclusion Program in Indiana	Doris Speicher, *Ball State University*
Table 4 Division B	The Impact of Rotating Class Times Upon Students, Parents, and Teachers: An Alternative Middle School Schedule	Mark Seele, *Carroll M.S. (IN)*; Jay Thompson, *Ball State University*; Kenneth Fowble, *NW Allen County Schools (IN)*
Table 5 Division B	TQM in Educational Curriculum: Implications, Applications, and Considerations	Vicki Harris, *New Castle Area Vocational Center (IN)*; Terry Wiedmer, *Ball State University*
Table 6 Division D	Sources of Teacher Stress Associated with Teaching Students with Severe Disabilities: Contributing Factors and Management Strategies	H. Lynn Springfield, Donald Boyd, *Arkansas Special Education Resource Center*
Table 7 Division D	Creating Overlap Between Teachers'/Professors' Worlds and their Students' Worlds	Thomas Parish, *Kansas State University*; James McCluskey, *University of Oklahoma*
Table 8 Division E	Foreign Language Learning Difficulties: A Decade of Cognitive, Affective, and Linguistic Research	James Javorsky, *Purdue University*; Richard Sparks, *Mount Saint Joseph's College*
Table 9 Division E	Issues Regarding Adolescent Identity Development	Linda Bakken, Christy Calvert, E. Jean Lytle, Carlene Jones, *Wichita State University*
Table 10 Division G	Subjective Fourth-Grade Responses to TV and Video	Kenneth Bretl, *Governors State University*
Table 11 Division G	Validation of a Self-Control Rating Scale in Chinese Preschool Children	Aimin Wang, *Miami University (OH)*; Mingyi Qian, *Peking University*; Jeanne Thibo Karns, *University of Nebraska*
Table 12 Division K	Assessment of College and University Students	Louise Fleming, *Ashland University*
Table 13 Division K	Alternative Assessments: Establishing Benchmarks in the Preparation of Professional Educators	Charles Manges, *Texas A&M University-Corpus Christi*; Stanley Wigle, *University of Tennessee-Martin*
Table 14 Division K	Directors of Field Experience: Perceptions of Their Roles and Responsibilities in the Evaluation Process	Hema Ramanathan, *Ohio State University*
Table 15 Division K	Using Action Research to Inform Curriculum Deliberations in an Early Childhood Teacher Education Program	Mary Connolly, Margaret Dotson, *Sinclair Community College*

Friday October 4, 1996

LUNCHEON
FEATURED SPEAKER
Session 53 **11:00 a.m. - 1:20 p.m.** **Sauganash Ballroom East**

Stability and Change in Education
Mary M. Kennedy
Michigan State University

Professor Kennedy will address the relationship between research and teaching by examining a variety of contentions about how research can, should, or actually does contribute to improvements in education. Her review will suggest a surprising new interpretation of the relationship between research and practice.

Professor and the Director of the Institute for Research at Michigan State University, Mary M. Kennedy has won four awards for her work on the nature of knowledge needed for teaching. Professor Kennedy has authored numerous journal articles and book chapters in these areas, and has authored reports specifically for policy audiences, including the United States Congress. She recently edited *Teaching Academic Subjects to Diverse Learners*, a collection of articles examining the nature of knowledge teachers need in each of the major content areas and knowledge they need about students as learners.

RESEARCH SESSIONS **1:30 p.m. -2:50 p.m.**

Session 54	**Using Technology in Teacher Education**	**Paper Session** (Division K)
Western Stage	Integrating Technology into a College of Education and Human Services	Susan Cramer, Henry Winterfeldt, *University of Wisconsin-Oshkosh*
Chair/Discussant Sonja Smith *Mount Vernon Nazarene College*	The Use of Electronic Communication to Develop Alternative Avenues for Classroom Discussion	Karen Dutt, Susan Powers, *Indiana State University*
	From the Bridge of the Starship Enterprise: Utilizing Interactive Distant Learning in Graduate Education	Richard Lipka, Brenda LeTendre, *Pittsburg State University*
Session 55	**Enhancing the Clinical Preparation of Teachers**	**Paper Session** (Division K)
Steamboat Hotel	The Impact of Training Cooperating Teachers on the Professional Development of Student Teachers	Connie Bowman, *Ohio State University*; Carmen Giebelhaus, *University of Dayton*
Chair/Discussant Barb Witteman *Concordia College*	Phases of the Mentoring Environment: Developing Cluster Sites in Teacher Education	Jennifer Fager, *Western Michigan University*
	Combining Quantitative and Qualitative Methods to Improve the Research on Clinical Preparation	Anthony Baxter, *Salem State College*

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Friday October 4, 1996

RESEARCH SESSIONS	1:30 p.m. - 2:50 p.m.	
Session 56 **Mansion House** **Chair** Gregory Marchant, *MWERA President* **Discussant** Charles C. Anderson, Jr., *Former MWERA Executive Officer*	**Historical Perspectives, Lessons Learned, and Future Directions for MWERA** President Marchant has invited this distinguished panel of former MWERA presidents and our current Association Historian to discuss the history of MWERA. These individuals witnessed and promoted much of the growth experienced by MWERA. In an open discussion, they will share their unique perspectives and insights about MWERA.	**Featured Panel** (MWERA Special) Terri Strand, *MWERA Historian*; Past MWERA Presidents and Officers
Session 57 **Columbian House** **Chair** Thomas Parish, *Kansas State University*	**How to Measure Up in Higher Education** This session will assist participants in developing skills which will enable them to obtain and thrive in positions in higher education. Specifically, discussed will be how to use technology, publish, and successfully work as professional consultant.	**Special Workshop** (Division D) Thomas Parish, *Kansas State University*; James Necessary, *Ball State University*; James McCluskey, *University of Oklahoma*
Session 58 **Bull's Head** **Chair** Gene Kramer, *American Dental Association* **Discussant** Benjamin Wright, *University of Chicago*	**Designing and Scoring Patient Management Problems** Current Practices in Scoring Patient Management Problems Alternative Scoring Methods for Patient Management Problems	**Symposium** (Division I) Dorthea Juul, *American Board of Psychiatry and Neurology* Kevin Fuss, Richard Smith, *RFI/MarianJoy Rehabilitation Network*
Session 59 **Fork's House** **Chair** Michael Penrod *Southeast Kansas Education Service Center* **Discussant** Louise Fleming *Ashland University*	**Midwestern Educational Development, Minority, and Gender Issues** The Minority Student Experience in a Midwest School District William Torrey Harris: His Life and Contributions to Education By Women and About Women: What American Educational Historians Can Learn from Our Canadian Neighbors	**Paper Session** (Division F) Mary Ann Bendezu, *University of Nebraska-Lincoln* Kenny McDougle, *Pittsburg State University* Elizabeth Johnson, *Eastern Michigan University*
Session 60 **Lake House** **Chair** Jay Thompson *Ball State University*	**Educational Change: A Conversation Regarding Research Agendas Needed to Impact Schools** A panel of school administrators will briefly discuss educational change, school reform, and innovations with which they have been involved. The main focus will be to generate a dialogue on needed research that would assist educational practitioners as they work to improve educational quality.	**Symposium** (Division B) Rex Bolinger, *Angola H.S. (IN)*; Pam Frampton, *Amelia Earhart Elementary School (IN)*; David Smith, *Lake Park District 108 (IL)*; Jeff Swenson, *Raymond Park M.S. (IN)*; Vicki Vaughn, *Burris Laboratory School (IN)*

Friday October 4, 1996

RESEARCH SESSIONS	1:30 p.m. - 2:50 p.m.	
Session 61	**Social Class and Schools**	**Paper Session** (Division G)
American House	A New Look at the Old Schoolhouse	Thomas Oldenski, *University of Dayton*
Chair/Discussant Mary Ann Flowers, *Cleveland State University*	Gender, Ethnic, and Race Differences of Attitudes and Interest in Mathematics, Science, and Computers in Majority Hispanic Schools	Bernard Arenz, Sally Blake, *University of Texas-El Paso*
	Means and Effectiveness of Select Pre-College Programs	J. Russell Higham, *Illinois State University*

The 1996 MWERA Conference promises to be one of our most memorable yet!

Invite your Colleagues and Students to become involved.

Friday October 4, 1996

ROUNDTABLE PRESENTATIONS Session 62	1:30 p.m. - 2:50 p.m.	Sauganash Ballroom West
Table 1 Division A	Substitute Teachers: A Vital Link in School Reform	William Hughes, *Ashland University*
Table 2 Division B	Establishing Curriculum Through Effective Public Relations	Teresa Finkbine, Brad Oliver, Terry Wiedmer, *Ball State University*
Table 3 Division D	Developing, Implementing, and Evaluating a Quality School Program	Gary Louis, Pamela Ficke, *Cincinnati Public Schools*
Table 4 Division D	Two Checklists for Determining Teacher/Professor Effectiveness	James McCluskey, *University of Oklahoma*; Thomas Parish, *Kansas State University*
Table 5 Division E	A Systematic Approach to Instructional Delivery: A Collaborative Effort Emphasizing the Input of School Psychologists	Isadore Newman, *University of Akron*; Donna Waechter, *Akron Board of Education (OH)*
Table 6 Division E	Mother-Infant Attachment: Its Relationship to Mother Sensitivity and Infant Temperament	Maribeth Lenz, Linda Bakken, *Wichita State University*
Table 7 Division H	Community Involvement in the Implementation of Funded School Improvement Programs	Jerry Staggs, William Loadman, *Ohio State University*
Table 8 Division H	Disciplinary Policy and Suspension Rates: A Quantitative/Qualitative Analysis	Joe Nichols, William Ludwin, Peter Iadicola, *Indiana University Purdue University-Fort Wayne*
Table 9 Division H	Week of Welcome (WOW Week): Preparing Ninth Graders for the High School Experience	Josephine Cammallarie-Kavert, *University of California-Irvine*; Karen Guilden, *Ocean View HS (CA)*
Table 10 Division K	Cooperative Learning with Heterogeneous Populations: Inservice Teacher Education	Margaret Carroll, *Saint Xavier University*
Table 11 Division K	Distant Elementary Student Teachers' Concerns as Evidenced Through Bi-Weekly Journal Reflections	Susan Clayton-Randolph, *Indiana University*
Table 12 Division K	First-Year Special Educators' Use of Differentiated Teaching Strategies	Patricia Renick, *Wright State University*; Jeffrey Hecht, *Illinois State University*
Table 13 Division K	Professional Development Schools	Sandra Bland, *Illinois State University*
Table 14 Division K	Teachers' Perspectives on the Implementation of Portfolio Assessment: Views from the Field	Douglas Feldmann, *Indiana University*
Table 15 Division K	The Evaluation Process in Early Field Experiences: Perceptions of Cooperating Teachers and University Supervisors	Hema Ramanathan, *Ohio State University*

Friday October 4, 1996

RESEARCH SESSIONS	3:00 p.m. - 4:20 p.m.	
Session 63 **Western Stage** **Chair** E. Marcia Sheridan, *Indiana University-South Bend*	**Case-Based Pedagogy in Teacher Education** A summary of research in case method teaching, addressing fundamental instructional differences in using cases with undergraduate preservice teachers versus graduates, and raising questions about current practices and emphases in case-based pedagogy	**Symposium** (Division K) Mary Sudzina, *University of Dayton*; Mark Mostert, *Moorhead State*
Session 64 **Steamboat Hotel** **Chair** Kathleen Maury, *Mankato State University*	**Voices from Afar: Distance Learning in Teacher Education** An overview of current and potential applications of distance learning technology from a national perspective; with particular emphasis on applications in education.	**Symposium** (Division K) E. Lynne Weisenbach, *University of Indianapolis*
Session 65 **Mansion House** **Chair** Tom Vontz *Indiana University* **Discussant** Gloria Sandoval *Ohio State University*	**Technology in Higher Education** Technology Use by Higher Education Faculty Technology Integration in Higher Education: A Case Study of the Networked Classroom	**Paper Session** (Division J) Perry Schoon, *Illinois State University* Danillo Baylen, Margaret Bailey, *Northern Illinois University*
Session 66 **Columbian House** **Chair** Charles Rankin, *Kansas State University* **Discussant** Janet Sheehan, *Northern Illinois University*	**Program and/or Instrument Evaluation** The Measurement of Self-Efficacy for Program Evaluations Developing a Measure of Global and Content-Specific Efficacy of Preservice Teachers Using a Correlational Aptitude-Treatment Interaction Design in Educational Research	**Paper Session** (Division D) Everett Smith, Jr., Leslie Curda, Stephen Curda, *University of Oklahoma* Stephen Curda, Leslie Curda, Paul Kleine, *University of Oklahoma* Andrew Ridenour, Larry Henrikson, *Ball State University*
Session 67 **Bull's Head** **Chair** Marlene Schommer *Wichita State University* **Discussant** Orpha Duell *Wichita State University*	**Educational Psychology and Constructivism: What Do We Know and What We Need to Find Out** Examination of constructivism theory and its role in educational psychology, with generation of ideas for research, as well as the introduction of new ideas for using constructivism in the classroom.	**Symposium** (Division C) Sharon McNeely, *Northeastern Illinois University*; Anita Woolfolk Hoy, *Ohio State University*; Gregory Marchant, *Ball State University*

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Friday October 4, 1996

RESEARCH SESSIONS **3:00 p.m. - 4:20 p.m.**

Session 68 **Fork's House** **Chair** Dianne Ashby *Illinois State University*	**Aspects of Principals' Influences on School Culture**	**Paper Session** (Division A)
	Readiness for Change Among Urban School Principals: Leadership Style and Other Potential Influence	Theodore Kowalski, *Ball State University*
	Succeeding at Succession: Strategies for Principals	Barbara Brock, *Creighton University*
	The Relationship Between Gender of the Superintendent and Male and Female Principals' Perceptions of the Organizational Culture of the School District	Cynthia Beekley, LuAnn Boyer, Jocelyn Quinn, Sharon Smith, *Bowling Green State University*
	Collaboration is Not Just for Teachers: Special Education Leadership and Regular Education Principals Working Together	Theresa Quigney, *Cleveland State University*
	School Administrators' Perceptions of Training as Related to Newly Established National Standards	William Sharp, James Walter, *Southern Illinois University*
Session 69 **Lake House** **Chair** Thomas Parish, *Kansas State University*	**Profiles of Successful Educational Researchers: Secrets to Their Success**	**Invited Address** (Division D)
	Dr. Kiewra, former President of The Mid-Western Educational Research Association will discuss approaches used by successful scholars in education which promote productivity and success.	Kenneth Kiewra, *University of Nebraska-Lincoln*
Session 70 **American House** **Chair** Sharon Dodson *Western Michigan University* **Discussant** Zoe Barley *Western Michigan University*	**Learning to Use Data for Continuous Improvement in Schools**	**Symposium** (Division H)
	Insights and examples from work done at Western Michigan University regarding the learning process taking place in schools attempting to drive improvement efforts through the use of data.	Sharon Dodson, Cynthia Phillips, Mark Jenness, Cynthia Halderson, Zoe Barley, *Western Michigan University*

Help us prepare for the 1997 conference

Volunteers are always welcomed as preparations are made for the 1997 MWERA conference. If you are interested in aassisting, please contact Thomas Parish or your division chairperson.

Wednesday October 2, 1996
Conference Registration
11:00 a.m. - 5:00 p.m.
14th Floor, East Lobby
WORKSHOP SESSIONS12:00 p.m. - 5:00 p.m.

Session 1
Western Stage
12:00 - 3:00
(Fee: $5)**How Do We Assess Inquiry-Based Science Education?**
This workshop provides hands-on experience and guidance in using authentic assessment techniques in science. Participants will also learn how to use a newly developed CD-ROM computer package which simulates scientific discovery in seven environmental settings. Isadore Newman, *University of Akron*; John Hirschbuhl, *University of Akron*; Rowena Hubler, *Ohio Department of Education*; Jim Jackson, *University of Akron*; Kathy Sparrow, *Akron Public Schools*

Session 2
Mansion House
12:00 - 3:00
(Fee: $5)**Process and Framework for Developing Innovative Teacher Education Programs**
This hands-on workshop will guide participants in beginning the process of developing innovative teacher preparation programs. Participants will be helped to create a framework for such development, concrete ideas on how to continue, and a continuing support system. Kenneth Addison, Beverly Otto, Vivian Walkosz, Sharon McNeely, Janet Fredericks, Patricia Schutt, Joanne Frey, Edward Odisho, Janet Bercik, *Northeastern Illinois University*

Session 3
Bull's Head Room
12:00 - 3:00
(Fee: $15)**What's New in Multiple Comparison Procedures**
The main purpose of this workshop is to introduce educational researchers to new developments in multiple comparison procedures (MCPs). All presentations and examples will be provided in a notebook which will include a diskette containing the computer programs. Robert Barcikowski, Elizabeth Randolph, Ronald Elliott, Suzy Green, George Johanson, *Ohio University*

Session 4
Lake House
12:00 - 4:00
(Fee: $10)**Introduction to Structural Equation Modeling (SEM) with Amos**
This workshop will provide an introduction to SEM in the Windows environment. Modern advances in structural modeling and statistical methods will be presented with fully documented examples distributed as handouts and on diskette. Some experience in multiple regression or factor analysis is recommended. Werner Wothke, *SmallWaters, Inc.*

Session 5
Columbian House
1:00 - 2:30
(No Charge)**Children in Stress and the Adults Who Care for Them**
This workshop is intended for those who work with children and their parents. Participants will learn about the nature of stress in children's lives, how to identify common stressors and signs of stress, methods of helping children cope with stress, and available resources. Lisa Cutter, Mary McMullen, *Indiana University*

Session 6
Fork's House
1:00 - 4:00
(Fee: $5)**Making Math Multicultural Using the Computer as a Tool**
The objective of this workshop is to provide educators with methods of using the computer and math concepts to help children appreciate cultural differences. Hands-on problem-solving activities and handouts will be used. Participants may bring a diskette for copying programs. Mian Muhammad Yusuf, *Weber State University*

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HOTEL ROOM RESERVATION FORM

Mail this form to hotel--to be received by September 10, 1996
Organization: Mid-West Educational Researchers Association (MWERA)
To make your hotel room reservation, please complete and send this form to:

Reservations Manager
Holiday Inn-Mart Plaza
300 North Orleans Street
Chicago, IL 60654

Or Call:
(312) 856-5000

Specially reduced room rates are available to conference participants. To ensure a room at the special rate, reservations must be received by the hotel by September 10, 1996. After that date, reservations will be made at the prevailing rate on a space available basis.

Name: _____ Phone: _____

Company/Affiliation: _____

Address: _____

City/St/ZIP: _____

Sharing room with: _____

Method of payment: ___ Check (attached) ___ Credit Card (No._____)

Signature: _____ Expiration Date: _____

Arrival Date: _____ Arrival Time: _____ Departure Date: _____

Reservations will be held until 6:00 p.m. unless guaranteed*

Check type of Accommodation requested:

____Single occupancy (1 double bed) $96
____Double occupancy (1 double bed) $96
____Triple occupancy (2 double beds) $106
____Quad occupancy (2 double beds) $116
____No Smoking room if available

*To guarantee your reservation, please call Holiday Inn reservations at the number above or complete this form and mail it with a check for one night's cost payable to the Holiday Inn-Mart Plaza Hotel, or provide your credit card (AMEX, VISA, or MasterCard) information in the above space. For guaranteed reservations only, I understand that I am responsible for one night's room and tax charges which will be deducted from my deposit or charged to my credit card if I fail to cancel my reservation.

Signature: _____
All rooms subject to local city tax

NOTE: Hotel parking is $12.00 per day (no valet)

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MEETING REGISTRATION FORM
1996 MWERA Annual Meeting, Chicago, IL - October 2-5, 1996

Please complete each section of the form below. **All attendees, including program presenters, must register and pay applicable fees.** Please clearly print or type your name as you wish it to appear on your meeting badge. Nonmembers wishing to apply for membership may register at the member's rate if membership application (below) and fee are enclosed with conference registration. (Note: One individual registration per form; duplicate as necessary)

Name: _____

Affiliation: _____

Address: _____ City/ST/ZIP: _____

Phone: Bus. (___) _____ Hm.(___) _____ Fax(___) _____

Highest Degree: _____ Institution Awarding Degree: _____

Area of Specialization: _____ MWERA Division Preference: _____

E-mail address: _____

Is this your first MWERA Conference? ___Yes ___No

MEETING REGISTRATION

	Postmarked by Sept. 10	After Sept. 10
MWERA Member	$45.00	$55.00
Nonmember	$50.00	$60.00
Student member (attach letter from advisor or copy of student ID)	$30.00	$35.00
Attending Luncheon Only	$25.00	$28.00

Total Registration Fee Enclosed: $_____

The Friday luncheon is included in the registration fee. Will you be attending the luncheon? ___Yes ___No

PRE-CONFERENCE WORKSHOPS
(not included in conference registration fee)
*See program for workshop descriptions

___ Assess Inquiry-Based Educ ($5)	___ Process and Framework ($5)	___ What's New in MCP's ($15)
___ Introduction to SEM ($10)	___ Children in Stress and Adults (N/C)	___ Making Math Multicultural ($5)
___ Five-Point Framework (N/C)	___ Understanding the WWW ($10)	___ New Teacher Education (N/C)
___ "Clustering" (N/C)		

Total Workshop Fee Enclosed: $_____

MWERA MEMBERSHIP DUES

1996 Membership Dues (required for presenters)	Regular $18.00	Student $10.00
1997 Membership Dues	Regular $18.00	Student $10.00
Life Membership	$180.00	

Total Membership Dues Enclosed: $_____

MWERA Materials*
(Please indicate quantity desired)
*Materials must be picked up at the conference

_____ MWERA Membership Directory	$7.00 (ea.)
_____ MWERA 96 Annual Meeting Abstracts	$4.00 paper $3.00 IBM
_____ MWERA Lapel Pin	$3.00 (ea.)

Total Materials Fee Enclosed: $_____

TOTAL FEES ENCLOSED: $_____

When registering and/or joining, please make check(s) payable to MWERA, and mail completed form(s) to: Dr. Jean Pierce, Northern Illinois University, Department EPCSE, DeKalb, Illinois 60115.

Wednesday October 2, 1996
WORKSHOP SESSIONS (cont'd)12:00 p.m. - 5:00 p.m.

Session 7
American House
1:00 - 4:00

(No Charge)**A Five-Point Framework for Setting Up Instruction to Meet Student Learning Styles**
The workshop will include a variety of activities to help participants learn more about their own and their students' learning styles, implications of learning style for instruction, and examples of how the five-point framework can be used to design more effective instruction. Tim Green, *Indiana University*; William Green, *Andrews University*

Session 8
Columbian House
2:45 - 3:30

(Fee: $10)**Understanding the World Wide Web--Search Engines and Indexes**
This workshop is intended to provide education professionals with an overview of the world wide web. Participants will learn how the World Wide Web works and how to use Web-based search engines and search indexes to find specific information. Abbie Brown, *Indiana University*

Session 9
Mansion House
3:30 - 5:00

(No Charge)**Designing and Implementing a New Teacher Education Program: University-Based and School-Based**
This workshop is designed to provide participants with a realistic view of what can be achieved with a limited budget to provide support for new and beginning teachers. Specific examples and techniques will be provided. Janet Bercik, *Northeastern Illinois University*; Judith Henning, *East Maine School District 63 (IL)*

Session 10
Bull's Head Room
3:30 - 5:00

(No Charge)**"Clustering": A Tool in Creative Writing; A Power Tool in Research**
This workshop will provide participants the opportunity to explore "clustering" as a possible interview tool for conducting their research. Its purpose is to introduce the "clustering" technique, demonstrate its application in data collection, and to consider it value and utility for research. Irene Karpiak, *University of Oklahoma*

Friday October 4, 1996

ROUNDTABLE PRESENTATIONS Session 71	3:00 p.m. - 4:50 p.m.	Sauganash Ballroom West
Table 1 Division A	Induction Programs for Beginning Teachers	Barbara Brock, *Creighton University*
Table 2 Division A	State Mandated Reforms: Utilizing Required Change to Make a Positive Difference in the Public Schools	Marla Israel, *Illinois Resource Center*
Table 3 Division B	Community Relationships: The Keys to School Success (An Interview with Elaine Griffin – 1995 National Teacher of the Year)	Brad Oliver, Teresa Finkbine, Terry Wiedmer, *Ball State University*
Table 4 Division B	Making High School Curriculum Come Alive: Creating Alphabet Books	Marian Moeckel, *National State Teacher of the Year, Edgewood City Schools (OH)*; Terry Wiedmer, *Ball State University*
Table 5 Division B	The Effects of Learning, Course Evaluation, and Team Evaluation of Changing STAD Teams at Midterm	William Gnagey, Kirsten Potter, *Illinois State University*
Table 6 Division D	Evaluation of Student Services	Charoula Angeli, Jennifer Chow, Maria Ferreira, Vally Behjou, *Indiana University*
Table 7 Division E	A Cross-Sectional Comparison of Pre- and Early Adolescents: Perceptions of Parenting	Sharon Paulson, Cheryl Sputa, *Ball State University*
Table 8 Division G	I Hate School! Is There a Turning Point Between Playing Teacher and Leaving School?	Adria Karle-Weiss, Lea Lee, *Murray State University*
Table 9 Division G	Liberal Rhetoric, Conservative Choices: The Pedagogical Preferences of Middle Class Mothers	Ellen Brantlinger, *Indiana University*
Table 10 Division G	Origins of African and European American Stereotypes: An Analysis of Uncle Tom's Cabin from the Perspective of New Historicity	Joan Timm, *University of Wisconsin-Oshkosh*
Table 11 Division I	Performance-Based Evaluation in a Predominantly Black Medical College	Suzy Green, *Ohio University*; Pamela Williams, *Meharry Medical College*
Table 12 Division K	A Three-Year University/School District Collaboration for Teacher Preparation: Comparing Project Opportunity	Nadine Kilmer, Kathy Connor, *Iowa State University*
Table 13 Division K	Educational Inquiry as a Path to Teacher Empowerment	Gayle Allen, *Iowa State University*
Table 14 Division K	Effective Teacher Characteristics: A Qualitative and Quantitative Data Analysis	Joe Nichols, *Indiana University Purdue University-Fort Wayne*
Table 15 Division K	The Importance of Support Through Induction Programming in the Teacher Socialization Process	Karen Peterson, *Governors State University*

Friday October 4, 1996

PRESIDENT'S RECEPTION
Session 72 **9:00 pm. - 12:00 p.m.**

President's Reception
Hosted by:
Greg Marchant, President
9:00 p.m. - Midnight
15th Floor, Wolf Point Grill

Be a "Parrot Head"!

Come to the

President's Reception

Hosted by:

Gregory Marchant, MWERA President

9:00 p.m. - Midnight

Wolf Point Grill

15th Floor

Saturday October 5, 1996

Morning Hospitality Service
7:00 a.m. - 8:00 a.m.
14th Floor, West Lobby

PROGRAM COMMITTEE
Session 73 **7:30 a.m. - 9:20 a.m.**

MWERA Conference Program Committee Breakfast
7:30 a.m. - 9:20 a.m.
Kim Metcalf, Program Chair
Western Stage

RESEARCH SESSIONS **8:00 a.m. - 9:20 a.m.**

Session 74 **Steamboat Hotel** **Chair/Discussant** Kent Runyan *Pittsburg State University*	**Aggregating and Using Research on Teacher Education**	**Paper Session** (Division K)
	A Summative Survey on the Perceptions of Impact II Award Recipients in the State of Ohio	Anne Marie Thomas, William Loadman; *Ohio State University*
	Exploring the Relationship Between Teacher Empowerment and Teacher Job Satisfaction	Beverly Klecker, *Eastern Kentucky University*; William Loadman, *Ohio State University*
	Teacher Supply and Demand in the US: Analysis of ASCUS Data	Bret Barnard, Maureen Wilson, *Ohio State University*
Session 75 **Mansion House** **Chair** Sandra Miller *Illinois State University* **Discussant** Dierdre Jackson *Bradley University*	**Bandwagon Metaphor: Belief as Truth in the Phenomenon of Facilitated Communication**	**Alternative Session** (Division E) Mark Mostert, *Moorhead State University*
Session 76 **Columbian House** **Chair** Ronald Morgan, *Loyola University*-Chicago	**The Debate About Empirical and Narrative Inquiry: Should Researchers Strive for Balance?**	**Forum** (Division D)
	Deconstruction and reconstruction of complex issues associated with complex empirical and narrative research methodologies within the context of traditional, modern, and postmodern views.	Ronald Morgan, *Loyola University-Chicago*; Linda Behar-Horenstein, *University of Florida*; Thomas Parish, *Kansas State University*; Jennifer Haworth, *Loyola University-Chicago*
Session 77 **Bull's Head** **Chair** Sarah Peterson *Northern Illinois State University* **Discussant** Jean Pierce *Northern Illinois State University*	**Thinking about Complexities: Epistemology, Moral Reasoning, Cognitive Flexibility, and Adult Development**	**Paper Session** (Division C)
	Epistemology and Moral Reasoning	Marlene Schommer, Amit Bajaj, Linda Bakken, *Wichita State University*
	Construct and Criterion-Related Validity of Cognitive Flexibility	Ronna Dillon, Michael Whittier, *Southern Illinois University*
	Integrating Child and Adult Cognitive Development and Learning: A Vygotskian Perspective on Theory and Practice	Thomas Pourchot, M. Cecil Smith, *Northern Illinois University*

Saturday October 5, 1996

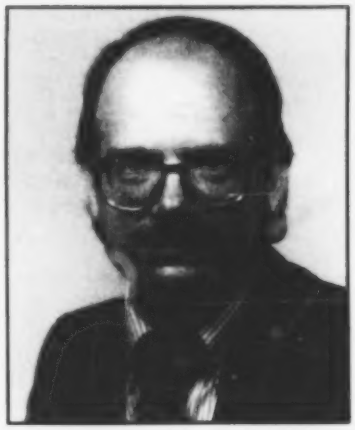
RESEARCH SESSIONS	8:00 a.m. - 9:20 a.m.	
Session 78 **Fork's House** **Chair** Peggy Simpson *University of Cincinnati* **Discussant** Larry McNeal *Illinois State University*	**State Efforts of Educational Reform**	**Paper Session** (Division A)
	Essential School Restructuring in Illinois: Lessons Learned and Barriers Encountered	Frederick Dawson, *Illinois State Board of Education*
	The Restructured Kentucky Department of Education-Does It Operate Differently?	Feng Din, *Union College*
	Educational Reform Through the Implementation of National Standards: A Response	Richard Reynolds, *Eastern Connecticut State University*
	The Difficulty of the Educational Task in Ohio Public Schools	Rich Hoffman, *Miami University (OH)*
	What Should be the State's Role in Improving Local Schools? A Study of State Mandated Accountability for Educational Reform	Paul Baker, Dianne Ashby, Ron William, *Illinois State University*
Session 79 **Lake House** **Chair/Discussant** Joan Timm, *University of Wisconsin-Oshkosh*	**Diversity Intervention**	**Paper Session** (Division G)
	The Effects of Cultural Sensitivity Training on the Perceptions of Preservice Teachers	Judith Jackson-May, Eugene Sanders, *Bowling Green State University*
	Wisconsin Educational Institutions' Knowledge of Wisconsin American Indian Cultures and Issues: Compliance with Act 31	Maureen Smith, *University of Wisconsin-Oshkosh*
	The Effect of Multicultural Education on College Students' Perception of Diversity Issues	Joan Timm, *University of Wisconsin-Oshkosh*
Session 80 **American House** **Chair** Carmen Giebelhaus, *University of Dayton*	**The True Partnership in Education: Teachers with Teachers**	**Symposium** (Division K)
	A discussion of the evolution and impact of a partnership between a suburban school district and university faculty members.	Carmen Giebelhaus, Dan Raisch, *University of Dayton*; Jane Chance, Sharon Angel, *Miamisburg City School District;* Patricia Ward, Nancy Hamilton, and Grace Wilcox, *Miamisburg H.S. (OH)*

Saturday October 5, 1996

PRESIDENTIAL ADDRESS
Session 81 **9:30 a.m. - 10:50 a.m.** **Steamboat Hotel**

Top Ten Problems Facing Teacher Education
Gregory Marchant
Ball State University

There are many issues and obstacles related to producing quality beginning teachers. This presentation offers ten challenges to teacher education. The list was developed in collaboration with Gary Griffin, University of Arizona. The session will include discussion time to pursue the issues presented and to consider other challenges and possible directions.



Gregory Marchant received his Ph.D. in Teaching-Learning Processes from Northwestern University and is currently Associate Professor of Educational Psychology at Ball State University. He was chair for the Midwest Association of Teachers of Educational Psychology and is currently the President of the Mid-Western Educational Research Association. He served for three years as the co-editor of the Mid-Western Educational Researcher, and serves on the editorial board of several journals. He is also the Associate Editor of the Newsletter for Educational Psychologists (APA/Div. 15). He has more than 20 articles and 50 conference presentations on motivation, cooperative learning, home schooling, teacher perceptions, teaching educational psychology, and other topics. His current research focus is on the interaction effects of parents, teachers, and schools on student achievement.

RESEARCH SESSIONS **9:30 a.m. - 10:50 a.m.**

Session 82	**Reflecting on Critical Aspects of Teaching**	**Paper Session** (Division K)
Western Stage	Critical Influences Experienced by Teacher Education Students and Professors	Sonja Smith, *Mount Vernon Nazarene College*; Joy McCullough, *Trinity Western University*
Chair/Discussant Mark Mostert *Moorhead State University*	Reflective Teaching: Does Content Matter?	Gil Naizer, Mary Bendixen-Noe, Ohio State University
	Reflective Teaching in Universities: Purposes, Patterns, and Pedagogy	Elizabeth Biederstedt, Aaron Kercheval, *Indiana University*
Session 83	**Preparing Preservice Teachers for the Unexpected**	**Paper Session** (Division K)
Mansion House	The Absence of Law Preparation in Teacher Education: Tragedies Waiting to Happen	John Cochren, Douglas Coutts, *Indiana University Purdue University-Fort Wayne*
Chair/Discussant Janet Bercik *Northeastern Illinois State University*	An Empirically-Based Violence Prevention Curriculum for Elementary Methodology Courses and Preservice Teachers	Kathryne Speaker, *Center for Teaching Excellence*; George Petersen, *Bowling Green State University*
	A Shift in Teachers' Responses Toward Serious Student Behavior Problems in Classrooms	Barbara Witteman, *Concordia College*

Saturday October 5, 1996

RESEARCH SESSIONS	9:30 a.m. - 10:50 a.m.	
Session 84 **Columbian House** **Chair/Discussant** James McCluskey, *University of Oklahoma*	**Computer Technology in Research**	**Demonstration Session** (Division D)
	Incorporating Graphics, Audio, and Video Into Your World Wide Web	Jeffrey Hecht, *Illinois State University*
	Free Form Data-Base Management	Sandra Bland, Jeffrey Hecht, *Illinois State University*
	Issues Arising from the Use of National Data Sets in Educational Research	Peggy Simpson, *University of Cincinnati*
Session 85 **Bull's Head** **Chair** Steven Benton *Kansas State University*	**Significant Issues in Professional Development Schools**	**Symposium** (Division C)
	This session will focus on the concept and practice of professional development schools from varying perspectives. Among these perspectives: the university supervisor, principal, and clinical teacher.	Gail Shroyer, Sally Yahnke, *Kansas State University*; Doyle Barnes, *Ogdon Elementary School (MI)*; Ronald Crowell, *Western Michigan University*; Donna Schonveld, *Prairieview Elementary (MI)*
Session 87 **Lake House** **Chair** John Fraas *Ashland University* **Discussant** Isadore Newman *University of Akron*	**Program Implementation and Evaluation: Public School and College Issues**	**Paper Session** (Division H)
	An Evaluation of Michigan's Systemic Reform Initiative: The Michigan Educational Leadership Collaborative in its First Year	Mark Fenster, David Kingsley, *Western Michigan University*
	How Special Education Services are Delivered in Kentucky Public Schools	Feng Din, *Union College*
	Venture Capital: Public School Restructuring in Ohio	Soonhwa Yoo, William Loadman, *Ohio State University*
	The Implementation and Evaluation of an Alternative High School Program	Barbara Wharton, William Loadman, *Ohio State University*
	Mission Statements: Are They Synthesized with College Courses?	Bonnie Dunwoody, Jeff Breese, *Saint Mary's College*
Session 88 **American House** **Chair/Discussant** Susan Brookhart *Duquesne University*	**Technology in Teacher Education**	**Paper Session** (Division K)
	Integrating the Internet into the Teacher Education Curriculum	Marcia Sheridan, *Indiana University-South Bend*
	Successful Use of Computers to Teach Writing: First-Year Teachers, Technology Integration, and Assessment	Danilo Baylen, L. Ruth Struyk, *Northern Illinois University*
	Transforming Teacher Education, Teaching and Student Learning in a Professional Development School Collaborative	Carole Newman, Barbara Moss, *University of Akron*

Saturday October 5, 1996

RESEARCH SESSIONS	11:00 a.m. - 12:20 p.m.	
Session 89 **Western Stage** **Chair/Discussant** Perry Lanier *Michigan State University*	**Pedagogy and Cultural Awareness**	**Paper Session** (Division K)
	Elementary Teachers' Pedagogical Content Knowledge in Mathematics	Roberta Fuller, *University of South Florida*
	Evaluating Multicultural Awareness in Preservice Mathematics Education Classes	Janet Sharp, *Iowa State University*
	Comparing Knowledge, Skills, and Confidence of Cross-Cultural Interactions of Field-Based and Campus-Based Preservice Teachers	Johnnie Thompson, Linda Bakken, Joseph Mau, *Wichita State University*
Session 90 **Steamboat Hotel** **Chair/Discussant** Joy McCullough *Trinity Western University*	**Reflecting on Teachers and Teaching**	**Paper Session** (Division K)
	A Longitudinal Study on Reflection of Preservice Teachers	Maria Elena Galvez-Martin, Connie Bowman, Margaret Morrison, *Ohio State University*
	Team Teaching in an Urban High School: Reflections on Teachers' Work	Elizabeth Lokon, *Miami University-Ohio*
Session 91 **Mansion House** **Chair** Joan McGuire *LaSalle Elementary (IL)* **Discussant** Paul Baker *Illinois State University*	**Promoting Schools and Students**	**Paper Session** (Division A)
	A Plan to Increase Student Enrollment in a Small Rural District	Melva Owens, *Wichita State University*
	Why Urban Students Succeed When School Becomes Their Extended Families: Project F.A.S.T.	Frederick Hampton, *Cleveland State University*
	A Marketing Study for Riverdale School: Serving a Culturally Diverse Community	Randall Turk, *Wichita State University*; Kathleen Patterson, *Wichita Catholic Diocese*; Mary Treaster, *Fairfield West Elementary (KS)*
	A Critical Analysis of Four Preschool Programs: Implications for School Leadership	Gay Shipley, Stephen Oborn, *University of Dayton*
Session 92 **Columbian House** **Chair** William Place *University of Dayton* **Discussant** Larry McNeal *Illinois State University*	**Preparation of Superintendents and School Board Members**	**Paper Session** (Division A)
	Transformational Leadership and Change in Education	Brian Hinrichs, *Illinois State University*
	Preparation for School Board Membership	Marilyn Grady, *University of Nebraska-Lincoln*
	Organizational Socialization Practices of the Urban School Deputy Superintendent	Eugene Sanders, *Bowling Green State University*
	Faculty and Student Perceptions of a Cohort Structure on an Educational Leadership Doctoral Program: A Four Year Review	Linda Wesson, *Youngstown State University*; David Holman, David Cox, *Arkansas State University*

Saturday October 5, 1996

RESEARCH SESSIONS **11:00 a.m. - 12:20 p.m.**

Session 93 **Bull's Head** **Chair** Michael Penrod, *Southeast Kansas Education Services Center* **Discussant** Stephen Benton, *Kansas State University*	**Some Statistical Considerations**	**Paper Session** (Division D)
	Investigation of the Base Rate Problem in Predictive Efficiency Indices Associated with Logistic Regression Models	Irina Soderstrom, Dennis Leitner, *Southern Illinois University*
	Parametric and Nonparametric Tests of Interaction in the Split-Plot Design Under Conditions of Nonnormality and Covariance Heterogeneity	Mark Beasley, *Saint John's University*
	Single Group Repeated Measures Analyses: Multiple Comparisons Under Bradley's Stringent Criterion	Robert Barcikowski, Ronald Elliot, *Ohio University*
Session 94 **Fork's House** **Chair/Discussant** Katherine Sparrow, *Akron Public Schools*	**Program Evaluation: Statistical and Validity Issues**	**Paper Session** (Division H)
	Analyzing Data in a Repeated Measures Design: A Procedure Used to Determine if Aggregate Data Should be Analyzed	John Fraas, *Ashland University*; Isadore Newman, *University of Akron*; Katherine Benfield, Gary Benfield, *Akron Children's Hospital Medical Center*
	The Use of Values Measurement Models in Discerning Subcultural Differences Between Professions	Kristen Hovsepian, *Ashland University*; Rose Beeson, *University of Akron*; Mary Nuosce, *Tri-County Employer Assistance Program*
	An Empirical Test of the Construct Validity of the Child Behavior Checklist	Sharon Latkovich, *Ashland University*
	Estimating the Construct Validity of the Survey of Attitudes and Practices of Freshman Composition	James Salzman, *Ursuline College*; Isadore Newman, *University of Akron*
	Modeling Student Success with the Learning and Study Strategies Inventory (LASSI)	Amy Hendrickson, Gary Phye, *Iowa State University*
Session 95 **Lake House** **Chair/Discussant** Virginia Goodman *Chicago State University*	**Issues in Elementary School Curriculum**	**Paper Session** (Division B)
	Four Years of Elementary Bilingual Summer School with a Special Curriculum: What Worked, What Didn't	Sharon McNeely, *Northeastern Illinois University*
	Elementary Teachers' Perceptions of Inclusion	Mary Ellen Bargerhuff, *Miami University (OH)*
	Strategies that Work in Literacy Instruction in Multicultural Elementary Classrooms: A Word from Preservice Teachers	Rose Mary Scott, *University of Wisconsin-Parkside*
	The Effect of Instructional Interactions on Gender Participation	Shirley Ann Freed, *Andrews University*
	Online Collaborative Learning Environments: Review and Assessment	Abbie Howard Brown, Sonny Kirkley, *Indiana University*
Session 96 **American House** **Chair/Discussant** Larry Krengel *Northern Illinois University*	**Preservice Teachers' Perspectives**	**Paper Session** (Division K)
	The Global and Content-Specific Efficacy of Preservice Teachers	Stephen Curda, Leslie Curda, Paul Kleine, *University of Oklahoma*
	Teacher Effectiveness: Views of Preservice Teachers	Tom Ganser, *University of Wisconsin-Whitewater*
	Influence of Preservice Teachers' Beliefs about Pupils and Learning on Attitudes Toward Inclusion	Ellen Brantlinger, *Indiana University*

Subject/Session Index

A

Accountability	78
Adolescence	39, 52, 71
Adult Development	77
Alternative Education	39
Analogies	21
Assessment	30, 47, 52, 58, 62, 88
Attitudes	48, 61, 71, 83

C

Case-based Teaching	44
Classroom Practice	38
Cognition	44, 52,77
Collaboration	29, 62, 68, 71, 90
College	23, 31, 52, 57
Community	91
Constructive Memory	21
Constructivism	67
Continuous Improvement	70
Control Theory	62
Cooperative Learning	62, 71
Creativity	37, 71
Critical Thinking	37, 48
Cultural Diversity	91
Curriculum	31, 52, 62

D

Data Management	84, 94
Decentralization	40
Decision-Making	70
Delphi Process	23
Differentiated Teaching	62
Disability	30, 68
Discipline	62
Distance Learning	54

E

Early Career Teachers	45, 81
Educational Interventions	48
Educational Psychology	25, 67
Efficacy	96
Electronic Communication	54
Epistemology	77
Evaluation	18, 36, 62, 71, 80

F

Faculty Evaluation	34, 62
Field Experiences	17, 52, 55, 62
Finance	27
Foreign Language	52, 95

G

Gender	68

H

Higher Education	49, 57, 65, 81, 92
High School	62
History of Education	22, 59

I

Inclusion	52, 87, 95, 96
Infant	62
Instructional Strategies	52, 62, 95

J

Job Opportunities	22, 45, 74
Job Satisfaction	74

L

LASSI	94
Law	27, 83
Leadership	92
Learning Disabilities	52
Library	71
Literacy	23

M

Mathematics Education	89
Measurement	36, 52, 58, 66
Medical	58, 71
Mentoring	55, 71, 80
Middle Level Education	17
Middle School	52, 71
Minority	59, 61, 63, 64, 71, 79, 89, 95
Mission Statements	87
Mnemonics	21
Motivation	30
Multicultural Issues	89, 95
MWERA	56

P

Parenting	62, 71, 91
Partnerships	29, 71
Pedagogy	63, 71
Policy	27, 49
Portfolio	18, 62
Precollege	61
Preschool Issues	24
Preservice Teachers	45, 55, 62, 79, 90

Privatization 27
Professional Development 17, 29, 35, 52, 62, 82, 85, 89
Proficiency Testing 31
Program Issues/Evaluation 26, 62, 66, 70, 87
Public Relations 62, 71
Publishing Opportunities 22, 57

R

Reform 27, 32, 35, 38, 40, 53, 60, 62, 71, 78, 85, 87
Research Methodology 20, 28, 44, 47, 52, 53, 60, 66, 69, 71, 76, 84
Rural Schools 61

S

Science 71
School Boards 92
School-to-work 31
Self-esteem/Self-concept 39
Social Class 71
Special Education 68
Statistics 23, 28, 93, 94
Statistics Instruction 28
Student Teachers 17, 71
Study Skills 48
Superintendents 92
Supervision 52, 55, 62, 71, 80

T

Teaching and Learning 23, 30, 38, 53, 62, 88, 90
Teacher Attrition 26
Teacher Development 18, 26, 45, 80
Teacher Education 35, 44, 52, 54, 62, 63, 64, 67, 71, 79, 81, 82, 83, 85, 88, 89, 90
Teacher Performance 18, 26
Teacher Stress 52
Technology 25, 54, 57, 61, 63, 64, 65 84, 88, 95
Teenage Pregnancy 39
Television 52
Testing Issues 30, 51
Textbook Selection 62
Text Comprehension 21
Total Quality Management 52

U

University 34, 49, 52, 57
Urban Schools 92

V

Validity 36, 77, 94
Values 96
Violence 83

W

Writing 65

942

Presenter/Session Index

Presenter	Session
Addison, Kenneth, Northeastern Illinois University	2
Allen, Gayle, Iowa State University, 3419 Taft Avenue, Ames, IA 50010	71
Ambrosio, Anthony, Wichita State University	21
Anderson, Charles, 1332 Southwind Drive, Northbrook, IL 60062	56
Angel, Sharon, Miamisburg City School District	80
Angeli, Charoula, Indiana University,School of Education, Bloomington, IN	71
Arenz, Bernard, University of Texas at El Paso, TED/COE, El Paso, Texas 79968	61
Ashby, Dianne, Illinois State University	68, 78
Bahasa, Akademi, Indonesia	21
Bailey, Margaret, Northern Illinois University	65
Bainer, Deborah L., The Ohio State University-Mansfield, 1680 University Drive, Mansfield, Ohio 44906	29, 33
Bajaj, Amit, College of Education, Wichita State University, Wichita, KS 67260-0123	77
Baker, Paul, Illinois State University	78, 91
Bakken, Linda, Wichita State University, Wichita, KS 67260-0123	19, 52, 62, 77, 89
Barcikowski, Robert S., McCracken Hall 201, College of Education, Ohio University, Athens, Ohio 45701	3, 93
Bargerhuff, Mary Ellen, Miami University, 862 Olde Farm Ct.,Vandalia, Ohio 45377	95
Barley, Zoe A., Western Michigan University, Center for Research on At-Risk Students, College of Education, Kalamazoo, MI 49008	38, 70
Barnard, Bret, Ohio State University, 287 Arps Hall, 1945 N. High Street, Columbus, Ohio 43210	74
Barnes, Doyle,Ogden Elementary School, Ogden, KS	85
Baum, Angela C., 101 Child Development Building, Iowa State University, Ames, Iowa 50011	24
Baxter, Anthony G., Salem State College, 320 Newbury Street, #205, Danvers, MA 01923-1051	55
Baylen, Danilo M., Northern Illinois University, LEPS/Instructional Technology, DeKalb, IL 60115	65, 88
Beasley , T. Mark, St. John's University, DAIL, School of Education, 8000 Utopia Parkway, Jamaica, NY 11439	93
Beckwith, Tatia, 1310 Reva Lane, Northern Illinois University, Sandwich, IL 60548	48
Beekley, Cynthia, Bowling Green State University	68
Beerman, Susan E., Monroe County Community Schools, Bloomington North High School, Bloomington, IN 47408	31
Beeson, Rose, University of Akron, Akron, Ohio	94
Behar-Horenstein, Linda S., College of Education,University of Florida, Gainesville, FL 32611	31, 76
Behjou, Vally, Indiana University, School of Education, Bloomington, IN	71
Bendezu, Mary Ann, Department of Educational Administration, University of Nebraska-Lincoln, 3712 Wildbriar Lane, Lincoln, NE 68516	59
Bendixen-Noe, Mary, Ohio State University at Newark, 1179 University Drive, Newark, Ohio 43055	15, 82
Benfield, Katherine, Akron Children's Hospital Medical Center, Akron, Ohio	94
Benfield, Gary, Akron Children's Hospital Medical Center, Akron, Ohio	94
Benton, Steven, 369 Bluemont Hall, Department of Educational Psychology and Counseling, Kansas State University, Manhattan, Kansas 66506	15, 85, 93
Benz, Carolyn R., School of Education, University of Dayton, Dayton, Ohio 45469-1410	34
Bercik, Janet, 1521 Lake Avenue, Whiting, Indiana 46394-1138	2, 9, 83
Biddle, Julie K., University of Dayton, 300 College Park, Dayton, Ohio 45469-0510	39
Biederstedt, Betsy, Indiana University, 5329 N. Capital Avenue, Indianapolis, IN 46208	82

Presenter/Session Index

Presenter	Session
Blake, Sally, University of Texas at El Paso, TED/COE, El Paso, Texas 79968	61
Bland, Sandra J., Illinois State University, Department of Educational Administration & Foundations, Campus Box 5900, Normal, IL 61790-5900	62, 84
Blatt, Stephen J., Department of Communication, University of Dayton, St. Joseph's Hall 103, Dayton, Ohio 45469-1410	34
Boggs, Heather, Ohio State University, Educational Policy and Leadership, 140 West New England Avenue, Worthington, Ohio 43085	18, 35
Bolinger, Rex, Angola High School, Angola, IN	60
Bowman, Connie, 839 Knollwood Circle, Washington Court House, Ohio 43160	14, 55, 90
Boyd, Donald, Arkansas Special Education Resource Center, 1405 N. Pierce, Suite 101, Little Rock, Arkansas 72207	36, 52
Boyer, LuAnn, Bowling Green State University	68
Brady, Peter, Clark State Community College, P.O. Box 570, Springfield, OH 45501	30
Brantlinger, Ellen, Education 3236, Indiana University, Bloomington, IN 47405	71, 96
Breese, Jeff, Saint Mary's College, Box20-Department of Education, Notre Dame, IN 46556	87
Bretl, Kenneth M., Govenors State University, 17508 Brook Hill Drive, Orland Park, IL 60462	52
Brock, Barbara, Creighton University	68, 71
Brookhart, Sue, Duquesne University, 102 N. 18th Street, Wheeling, WV 26003-7038	88
Brown, Abbie Howard, Evermann #245, Bloomington, Indiana 47405	8, 95
Calvert, Christy, Wichita State University, Wichita,KS	52
Cammallarie-Kavert, Josephine, University of California-Irvine, 2682 Dunstan Drive, Tustin, California 92680	62
Campbell, Mary, Saint Xavier University	44
Carroll, Margaret Kelly, Saint Xavier University, 3700 West 103rd Street, Chicago, IL 60655	62
Cashin, Susan E., Southern Illinois University, Institutional Research & Studies Mailcode4512, 2179 Faner Hall, Carbondale, IL 62901	28
Chance, Jane, Miamisburg City School District	80
Chen , K. H. , c/o Ayres D'Costa, Ohio State University, 287 Arps Hall, 1945 North High Street, Columbus, Ohio 43210	20
Chow, Jennifer, Indiana University, School of Education, Bloomington, IN	71
Clark, Mary, Wayne State University	49
Clayton-Randolph, Susan E., W.W. Wright Education Bldg.1020A, Indiana University, Bloomington, IN 47405-1006	62
Cochren, John R., Neff Hall Room 240 E., 2101 Coliseum Blvd., East, Indiana/Purdue University, Fort Wayne, IN 46805	83
Cole, Mandy, Miami Univesity, 1071 Celestial Street, #1503, Cincinnati, Ohio 45202	24
Collier, Jacqueline K., Miami University, 707 West Chestnut Street, #7, Oxford, Ohio 45056	17, 34
Connolly, Mary, Child and Family Education Department, Sinclair Community College, 444 West Third Street, Dayton, Ohio 45402	52
Connor, Kathy R., Iowa State University, N131 Lagomarcino, Ames, IA 50011	71
Coutts, J. Douglas, Indiana/Purdue University, Neff Hall Room 240 E., 2101 Coliseum Blvd., East, Fort Wayne, IN 46805	83
Cox, David, Arkansas State University	92
Cramer, Susan, College of Education & Human Services, University of Wisconsin-Oshkosh, Oshkosh, WI 54901	54
Crowell, Ronald, Western Michigan University	85
Curda, Leslie K., University of Oklahoma, Norman, OK 73019	66, 96
Curda, Stephen K., University of Oklahoma, Norman, OK 73019	66, 96
Curry, Lila L., Bowling Green State University	49
Cutter, Lisa J., 1024 North Jackson Street, Bloomington, Indiana 47404	5
Dawson, Frederick, Illinois State Board of Education	52, 78

Presenter/Session Index

Presenter	Session
D'Costa, Ayres, Ohio State University, 287 Arps Hall, 1945 North High Street, Columbus, Ohio 43210	1, 20, 29
Dazun, Luo, Ball State University, Muncie, IN	45
Dellario, Thomas, Loy Norrix High School	18
Dillon, Ronna F., Department of Educational Psychology, Southern Illinois University, Carbondale, IL 62901	77
Dimitrov, Dimiter M., Kent State University, 507 White Hall, Kent, Ohio 44242-0001	36
Din, Feng S., Box 851, Union College, Barbourville, KY 40906	78, 87
Dodson, Sharon C., Western Michigan University, Kalamazoo, MI 49008	38, 70
Dotson, Margaret, Sinclair Community College, 444 West Third Street, Dayton, Ohio 45402	52
Dretzke, Beverly, Wisconsin-Eau Claire	37
Dubois, Nelson, SUNY-Oneonta	37
Duell, Orpha K., Wichita State University, 5805 E. Rockhill, Wichita, KS 67208	67
Dunn, Randy, Southern Illinois University	27
Dunwoody, Bonnie, Saint Mary's College, Box 20-Department of Education, Notre Dame, IN 46556	87
Dutt, Karen M., Indiana State University, School of Education-8th Floor, Dept. of Elementary Ed. & Early Childhood Ed., Terre Haute, IN 47809	26, 54
Earley, Mark, University of Toledo, 5916 Ryewick Drive, Toledo, OH 43614	23
Echols, Celina V., University of Akron,College of Education, Zook Hall 422, Akron, Ohio 44325-4208	51
Edinger, Marlea, Loyola University Chicago, 1041 Ridge Road, Wilmette, IL 60091	37
Edwards, Audrey T., Eastern Illinois University, Secondary Education and Foundations, 600 Lincoln Avenue, Charleston, Illinois 61920	17
Ellingson, Jana, Flandreau High School	18
Elliott, Ronald, 206 McCracken Hall, College of Education, Ohio University, Athens, Ohio 45701	3, 93
Elmore, Patricia B., Southern Illinois University, Institutional Research & Studies Mailcode 4512, 2179 Faner Hall, Carbondale, IL 62901	28
Evertson, Carolyn	16
Fager, Jennifer J., Western Michigan University, Department of Education and Professional Development, 2439 Sangren Hall, Kalamazoo, Michigan 49008	18, 55
Farmer, Raquel, University of Illinois-Champaign-Urbana	39
Fast, Gerald R., College of Education, University of Wisconsin-Oshkosh, Oshkosh, Wisconsin 54901	21
Feldmann, Douglas A., Indiana University, 3811 Morningside Drive #45, Bloomington, IN 47408-4389	62
Fenster, Mark, Western Michigan University, 931 Austin St. #2, Kalamazoo, MI 49008	87
Ferreira, Maria, Indiana University, School of Education, Bloomington, IN	71
Ficke, Pamela J., Cincinnati Public Schools, Cincinnati, Ohio	62
Finkbine, Teresa L., Ball State University, Muncie, IN	62, 71
Fisher-Robertson, Julie, Northern Illinois University, 1240 Normal Road, DeKalb, IL 60115	48
Fleming, Louise E., Ashland University, 313 Bixler Hall, Ashland, Ohio 44806	15, 22, 52, 59
Flowers, Mary Ann, Cleveland State University	61
Fowble, Kenneth, Northwest Allen County Schools	52
Fox, Christine M., College of Education and Allied Professions, The University of Toledo, Toledo, Ohio 43606	20, 47
Fraas, John W., 220 Andrews Hall, Ashland University, Ashland, Ohio 44805	15, 87, 94
Frampton, Pam, Amelia Earhart Elementary School, Lafayette, IN	60
Fredericks, Janet, Northeastern Illinois University	2
Freed, Shirley A., Andrews University, School of Education, Berrien Springs, MI 49104	95

Presenter	Session
Frey, Joanne, Northeastern Illinois University, 5500 N. St. Louis Avenue, Chicago, IL 60625-4699	2, 52
Fuller, Roberta, University of South Florida, 4202 East Fowler, EDU208B, Tampa, FL 33620-5650	89
Furst, Lyndon, Andrews University, Berrien Springs, MI 49104	27
Fuss, Kevin, Rehabilitation Foundation Inc., Marianjoy Rehabilitation Network, P.O. Box 675, Wheaton, IL 60189	58
Galvez-Martin, Maria Elena, Galvin Hall, 4300 Campus Drive, Ohio State University, Lima, Ohio 45804	90
Ganser, Tom, Office of Field Experiences, University of Wisconsin-Whitewater, Whitewater, WI 53190	96
Giebelhaus, Carmen R., University of Dayton, 221F Chaminade Hall, 300 College Park, Dayton, Ohio 45469	18, 55, 80
Glenn, Eddie E., P.O. Box 733, Illinois State University, Normal, Illinois 61761	15, 46
Gnagey, William J., Illinois State University, 4620 Department of Psychology,Normal, IL 61790-4620	71
Gordon, Wayne, Western Illinois University	48
Goodman, V. Ellen, 8018 South Princeton, Chicago, Illinois 60620	15, 95
Gould, Harriet, University of Nebraska-Lincoln	27
Grady, Marilyn, University of Nebraska-Lincoln	27, 92
Granoff, Susanne A., The Ohio State University, 4494 Christina Lane, Gahanna, OH 43230	31
Green, Suzy, 206 McCracken Hall, College of Education, Ohio University,Athens, Ohio 45701	3, 71
Green, Tim, Wright Education Building 3221H, School of Education, Indiana University, Bloomington, Indiana 47405	7
Green, William H., Andrews University, Department of Teaching, Learning, and Administration, Bell Hall, Berrien Springs, Michigan 49104	7
Guilden, Karen, Ocean View High School, California	62
Halderson, Cynthia,Western Michigan University, Kalamazoo, MI 49008	38, 70
Halon, Christine S., The Ohio State University-Mansfield, 1680 University Drive, Mansfield, Ohio 44906	29
Hamilton, Minami, Western New Mexico University	19
Hamilton, Nancy, Miamisburg High School	80
Hampton, Frederick, Cleveland State University	91
Hansen, Edmund, Emporia State University, Morse Hall 023, Campus Box 4048, Emporia, KS 66801	30
Harris, Vicki L., New Castle Area Vocational Center, 3642 Lakeside Drive, Muncie, IN 47306	52
Haworth , Jennifer, Department of Curriculum, Instruction & Educational Psychology, Loyola University of Chicago, 1041 Ridge Road,Wilmette, IL 60091	76
Hecht, Jeffrey B., Illinois State University, Normal, IL 61790	62, 84
Hendrickson, Amy B., Iowa State University, Psychology Department, W112 Lagomarcino Hall, Ames, IA 50011	94
Henning, Judith, East Maine School District 63, 10150 Dee Road, Des Plaines, Illinois 60016	9
Henrikson, Larry W., Ball State University, 621 N. Calvert Street, Muncie, IN 47306	66
Higham, J. Russell, Illinois State University, EAF 5900, Normal, IL 61790-5900	49, 61
Hines, Edward, Illinois State University	49
Hinrichs, Brian, Illinois State University	92
Hirschbuhl, John, Ohio Department of Education, Columbus, Ohio	1
Hofmann, Rich, Miami University, 350 McGuffey Hall, Oxford, OH 45056	78
Holman, David, Arkansas State University	92
Hovsepian, Kristen, Ashland University, Ashland, Ohio 44805	94
Hubler, Rowena, Ohio Department of Education, Columbus, Ohio	1
Hughes, William, Ashland University, 1233 Columbus Circle N., Ashland, OH 44805	62

Presenter/Session Index

Presenter	Session
Hurford, David,Pittsburg State University, 215C Hughes Hall, Pittsburg, KS 66762	45
Hutchison, Barbara B., Moore Public Schools, 1009 Pruitt Drive, Oklahoma City, OK 73170	39
Hwang, Yooyeun, University of Wisconsin, Department of Educational Psychology, 1025 West Johnson Street, Madison, Wisconsin 53706	21
Iadicola, Peter, Indiana/Purdue University, Fort Wayne, IN 46805	62
Israel, Marla, Illinois Resource Center	71
Jackson, Dierdre, Bradley University	19, 46, 75
Jackson, Jim, University of Akron, Akron, Ohio	1
Jackson May, Judy, Educational Administration, Bowling Green State University, Bowling Green, Ohio 43402-0250	79
Javorsky, James, Purdue University, 1877 Shoshore Drive #21, Lafayette, IN 47905	52
Jenness, Mark, Western Michigan University, 3210 Sangren Hall, Kalamazoo, MI 49008	38, 70
Johanson, George, 206 McCracken Hall, College of Education, Ohio University, Athens, Ohio 45701	3
Johnson, Lynne, College of Education and Allied Professions, The University of Toledo, Toledo, Ohio 43606	47
Johnson, Elizabeth K., Department of Teacher Education, Eastern Michigan University	22, 59
Jones, Carlene, Wichita State University, Wichita, KS	52
Jonson, Jessica L., University of Nebraska-Lincoln, 3756 C Street, Lincoln, NE 68510	36
Juul, Dorthea, American Board of Psychiatry and Neurology	58
Kahlich, Pamela A., KJ Learning Partners, Inc., 333 North Kenyon Street, Indianapolis, Indiana 46219	15
Karle-Weiss, Adria, Murray State University, Dept. of Elementary & Secondary Education, Wells Hall, Murry, KY 42071	71
Karpiak, Irene, Educational Leadership and Policy Studies, 227 Collings Hall, University of Oklahoma, Norman, Oklahoma 73019	10
Keener, Catherine, Miami University, 1083 Tumbleweed Dr., Loveland, OH 45140	40
Kennedy, Mary, Michigan State University	53
Kercheval, Aaron, Indiana University, School of Education, Bloomington, IN	82
Kiewra, Kenneth, University of Nebraska-Lincoln, Lincoln, Nebraska	69
Killmer, Nadine M., Iowa State University, N131 Lagomarcino, Ames, IA 50011	71
Kingsley, David, Western Michigan University, Kalamazoo, MI 49008	87
Kirkley, Sonny, Indiana University, School Of Education, Bloomington, IN 47406	95
Klass, Patricia H., Illinois State University, 5900 EAF Department, Normal, IL 61790-5900	28
Klecker, Beverly, 412 Combs Hall, Eastern Kentucky University, Richmond, KY 40754-3113	74
Kleine, Paul F., University of Oklahoma, Norman, OK 73019	66, 96
Koll, Patricia J., University of Wisconsin-Oshkosh, 800 Algoma Blvd., Dempsey 335, Oshkosh, WI 54901	35
Kowalski, Theodore J., Department of Educational Leadership, TC 915, Ball State University, Muncie, IN 47306	31, 68
Kramer, Gene A., 9006 West 178th Street, American Dental Association, Tinley Park, IL 60477-7633	33, 58
Krengel, Larry, Northern Illinois University, 9409 Voss Road, Marengo, IL 60152	96
Lampe, Scherie Enderlin, University of Wisconsin-Oshkosh, 800 Algoma Blvd., Oshkosh, WI 54904	27
Lange, Linda D., P.O. Box 416, Sacred Heart University, Bridgeport, CT 06601-416	28
Lanier, Perry, Michigan State University	89
Latkovich, Sharon A., Ashland University, Miller Hall, Ashland, Ohio 44805	94
Lee, Lea, Murry State University, Department of Elementary & Secondary Education, Wells Hall, Murry, KY 42071	71

947

Presenter	Session
Leitner, Dennis, Southern Illinois University at Carbondale, Dept. of Educational Psychology and Special Education, Carbondale, IL 62901-4618	47, 93
Lenz, Maribeth, Wichita State University	62
Lessen, Elliot, Northern Illinois University, Dept. Of E.P.C.S.E., DeKalb, IL 60115	23
LeTendre, Brenda, Pittsburg State University, Dept. of SSAS, 1701 So. Broadway, Pittsburg, KS 66762-7578	54
Levin, Joel R., University of Wisconsin, Madison, Wisconsin	21
Lipka, Richard, Pittsburg State University, 215C Hughes Hall, Pittsburg, KS 66762	45, 54
Loadman, William E., The Ohio State University, 287 Arps Hall, 1945 N. High Street, Columbus, Ohio 43210-1172	32, 62, 74, 87
Loe, Humphrey, University of Missouri-Columbia, 111 Townsend Hall, Columbia, MO 65211	25
Lokon, Elizabeth, Miami University, 601 Brookview Court, Oxford, Ohio 45056	90
Lopez, Linda, Western New Mexico University	19
Louis, Gary W., Schwab Middle School, 4370 Beech Hill Avenue, Cincinnati, Ohio 45223	62
Ludwin, William G., Indiana/Purdue University, Fort Wayne, IN 46805	62
Lytle, E. Jean, Wichita State University, Wichita	52
Mallonee, Debra, Fairborn City Schools, Baker Junior High School, 314 Carpenter Drive, Fairborn, Ohio 45324	18
Manges, Charles, Texas A&M University-Corpus Christi, FC252 6300 Ocean Drive, Corpus Christi, TX 78412	52
Marchant, Greg, Department of Educational Psychology, Teachers College, Ball State University, Muncie, Indiana 47306	13, 42, 56, 67, 81
Marso, Ronald N., Bowling Green State University, Educational Foundationsand Inquiry, Bowling Green, Ohio 43403	26
Martin, Kaye M., Muskingum College, Montgomery Hall, New Concord, Ohio 43762	17
Mau, Joseph, Wichita State University, Wichita, KS	89
Maury, Kathleen, Mankato State University, Mankato, MN 56001	64
McClendon, Ronald, The University of Akron,College of Education,Zook Hall 301H, Akron, Ohio 44325-4208	51
McCluskey, James J., University of Oklahoma, School of Journalism, 306 Copeland Hall, Norman, OK 73019	52, 57, 62, 66, 93
McCullough, Joy D., 7600 Glover Road, Trinity Western University, Langley, BC V2Y 1Y1	26, 82, 90
McDougle, Kenny O., Pittsburg State University, 1701 South Broadway, Pittsburg, KS 66762	59
McElroy, Susan Williams, H. John Heinz III School of Public Policy and Management, Carnegie Mellon University, 5000 Forbes Avenue, Hamburg Hall, Pittsburgh, Pennsylvania 15213	20
McGuire, Joan, LaSalle Elementary School District, Peru, IL 61354	91
McMullen, Mary, Education 3260, School of Education, Indiana University, Bloomington, Indiana 47405	5
McNeal, Larry, Department of Edudational Administration and Foundations, Degalmo Hall Room 331, Illinois State University, Normal, Illinois 61790	15, 40, 78, 92
McNeely, Sharon, Northeastern Illinois University, P.O. Box 34421, Chicago, IIIL 60634	2, 67, 95
Midgette, Thomas, AWD/ADL	46
Miller, Sandra, Illinois State University	75
Moeckel, Marian A., National State Teachers of the Year, Edgewood City Schools, Trenton, Ohio	71
Moore, John P., 112 Main Avenue, Kaukauna Area School District, Kaukauna, WI 54130	35
Moore, Lou Anna, Miami University, 30 S. 25th St, Richmond, IN 47374	40
Morgan, Ronald R., Loyola University Chicago, 1041 Ridge Road, Wilmette, IL 60091	37, 76
Morrison, Margaret, Ohio State University	90
Morrow, Linda E., Muskingum College, Montgomery Hall, New Concord, Ohio 43762	17

Presenter/Session Index

Presenter	Session
Moss, Barbara, The University of Akron, College of Education, Akron, Ohio 44325-4205	88
Mostert, Mark P., Department of Special Education, Moorhead State University, Moorhead, MN 56560-9980	44, 63, 75, 82
Muskopf, Beth	40
Naizer, Gilbert L., Ohio State University at Newark, 1179 University Drive,Newark, Ohio 43055	82
Necessary, James R., Ball State University, Muncie, IN	47, 57
New, Clara, University of Wisconsin-Parkside, 900 Wood Road, Box 2000, Kenosha, Wisconsin 53141	15, 24, 45
Newman, Isadore, The University of Akron, College of Education, Zook Hall 424, Akron, Ohio 44325-4208	1, 19, 34, 51,62, 87, 94
Newman, Carole, The University of Akron, College of Education, Akron, Ohio 44325-4205	88
Nicaise, Molly, University of Missouri-Columbia, 111 Townsend Hall, Columbia, MO 65211	25
Nichols, Joe D., Indiana University-Purdue University at Ft. Wayne, Ft. Wayne, IN	39, 62, 71
Nunn, Gerald, Educational Services, Inc.	20
Nuosce, Mary B., Tri-County Employer Assistance Program	94
O'Connor, C. Richele, The Ohio State University, 108 S. Heather Hill, Bellefontaine, Ohio 43311	44
Odisho, Edward, Northeastern Illinois University	2
Oldenski, Thomas, 300 College Park Drive, Dayton, Ohio 45469-0534	61
Oleson-Holman, Arkansas State University	92
Oliver, Brad E., Ball State University, 1471 S. 16th Street Noblesville Schools, Noblesville, IN 46060	62, 71
Otto, Beverly, Northeastern Illinois University	2
Overbey, George, Kishwaukee College, 21193 Malta Road, Malta, IL 60150-9699	48
Owens, Melva, Wichita State University	91
Pallock, Linda, University of Wisconsin-Milwaukee, 8415 North Servite Drive, #101, Milwaukee, Wisconsin 53223	21
Patterson, Kathleen, Wichita State University	91
Parish,Thomas S., College of Education, 447 Bluemont Hall, Kansas State University, Mahattan, Kansas 66506	15, 28, 52, 57 62, 69, 76
Paulson, Sharon E., Ball State University, Department of Educational Psychology, TC524, Muncie, IN 47306-0595	71
Penrod, Michael, Southeast Kansas Educational Service Center, 3107 Southwest 21st Street, Topeka, Kansas 66604	15, 22, 59, 93
Petersen, George J., Department of Educational Administration, Bowling Green State University, Bowling Green, Ohio 43403-0250	26, 83
Peterson, Sarah, Northern Illinois University, DeKalb, IL 60115-2854	48, 77
Peterson, Karen M., College of Education, Governors State University, University Park, IL 60466	71
Pfannenstiel, Stacey, Wichita State University	19
Phillips, Cynthia, Western Michigan University, Kalamazoo, MI 49008	38, 70
Phye, Gary D., Iowa State University, Psychology Department, W112 Lagomarcino Hall, Ames, IA 50011	94
Pierce, Jean, Dept. of EPCSE, Northern Illinois University, DeKalb, IL 60115	77
Pigge, Fred L., Bowling Green State University, Educational Foundations and Inquiry, Bowling Green, Ohio 43403	26
Place, A. William, Department of Educational Administration,University of Dayton, Dayton, Ohio 45469	15, 45, 92
Plake, Barbara S., University of Nebraska-Lincoln, Lincoln, NE 68510	36

Presenter	Session
Pohlmann, John, College of Education Mailcode 4618, Southern Illinois University, Carbondale, IL 62901	34
Pomplun, Mark,University of Kansas, B101 Bailey Hall, CETE, Lawrence, KS 66045-2327	47
Potter, Kirsten I., Illinois State University, 4620 Department of Psychology, Normal, IL 61790-4620	71
Pourchot, Thomas L., Northern Illinois University, 425 Leonard Avenue, DeKalb, IL 60115	77
Powers, Susan, Indiana State University,School of Education-10th Floor, Dept. of Curriculum, Instruction, and Media Technology,Terre Haute, IN 47809	54
Price, Jay R., University of Wisconsin-Stevens Point, School of Education, College of Professional Studies, Stevens Point, WI 54481-3897	17, 35
Qian, Mingyi,Peking University, Beijing, China	52
Quigney, Theresa, Cleveland State University	68
Quinn, Jocelyn, Bowling Green State University	68
Rahlich, Pamela, KJ Learning Partners, Inc.	49
Raisch, Dan, Department of Teacher Education, The University of Dayton, Dayton, Ohio 45469-0525	27, 80
Ramanathan, Hema, The Ohio State University, 221 Ramseyer Hall, 29 W. Woodruff Avenue, Columbus, Ohio 43210	52, 62
Randolph, Elizabeth, Ohio University, Athens, Ohio 45701	3
Rane-Szostak, Donna, Northern Illinois University, 1240 Normal Road, DeKalb, IL 60115	48
Rankin, Charles, Kansas State University	66
Rasmussen, Kim D., Center for Educational Testing and Evaluation, University of Kansas, B101 Bailey Hall, Lawrence, KS 66045	47
Raym, William, Illinois State University	78
Reisetter, Marcy, Department of Educational Psychology, University of Nebraska	18
Renandya, Willy A., Indonesia	21
Renick, Patricia R., Wright State University, Dayton, Ohio 45435	62
Reynolds, Richard, Eastern Connecticut State University, Dept. Of Education, 83 Windham St., Willimantic, CT 06226	78
Rickman, Jacqueline, Western Illinois University, 1 University Circle, Horrabin Hall 80 B, Macomb, IL 61455	30
Ridenour, T. Andrew, Ball State University, 621 N. Calvert Street,Muncie, IN 47306	66
Roberts, Nicole, University of Illinois, 300 Shelbourne 18, Normal, IL 61761	40
Robinson-Armstrong, Abbie, University of Toledo, 3160 Matson Street, Toledo, OH 43606	49
Robinson, Mary A., Stark County Educational Service Center, 2100 38th Street NW, Canton, OH 44709	31
Rodgers, Adrian, Ohio State University, 516 Mahoning Court, Columbus, Ohio 43210	18
Rogers, Bruce G., Department of Educational Psychology and Foundations,College of Education, University of Northern Iowa, Cedar Falls, Iowa 50614	15, 36, 47
Romanowski, Michael H., Ohio Northern University, Center for Teacher Education, Ada, Ohio 45810	44
Rost, Beth, University of Wisconsin-Oshkosh, 800 Algoma Boulevard, COEHS/NE 504, Oshkosh, WI 54901	45
Runyan, Charles K., Pittsburg State University, 215C Hughes Hall, Pittsburg, KS 66762	45
Runyan, Kent, Pittsburg State University	74
Salzman, James A., Ursuline College, Education Division, 2550 Landler Road, Pepper Pike, OH 44124	31, 94
Sanders, Eugene T. W., Educational Administration, Bowling Green State University, Bowling Green, Ohio 43402-0250	79, 92
Sandoval, Gloria, 28 Alondra Road, Santa Fe, New Mexico 87505	15, 23, 30,49, 65

950

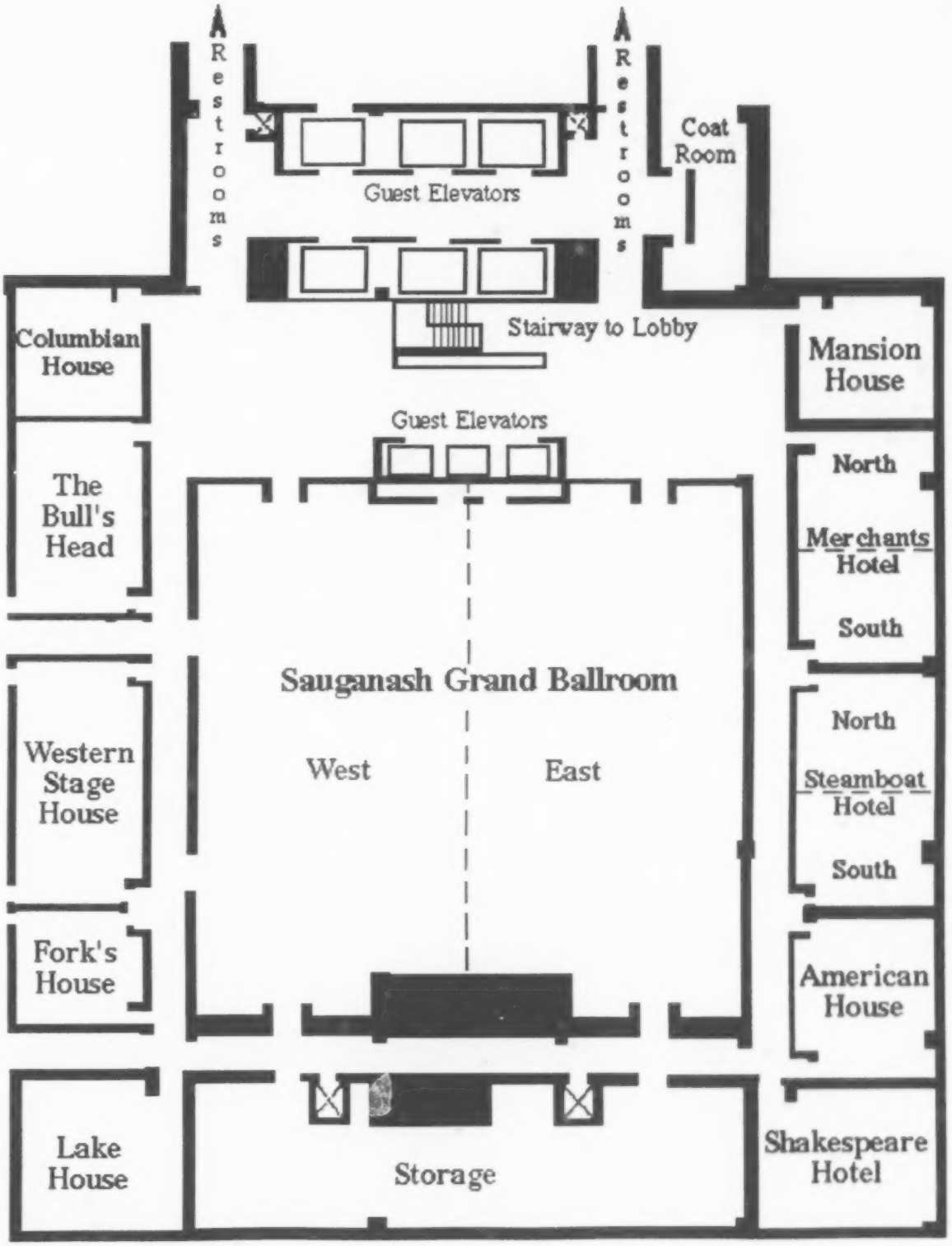
Presenter/Session Index

Presenter	Session
Schmidt, Mary Ellen, Ohio State University-Mansfield	35
Scholes, Robbie, ACT	48
Schommer, Marlene, College of Education, Campus Box 123, Wichita State University, Wichita, Kansas 67260	15, 21, 67, 77
Schonveld, Donna, Prairieview Elementary, 1765 Iriquois, Battle Creek, MI 49015	85
Schoon, Perry, Illinois State University, EAF Department, Campus Box 5900, Normal, IL 61790	65
Schutt, Patricia, Northeastern Illinois University	2
Scott, Rose Mary, University of Wisconsin-Parkside, Teacher Education, 900 Wood Road, Kenosha, WI 53141-2000	95
Seele, Mark R., Carroll Middle School, 3905 Carroll Road, Fort Wayne, IN 46818	52
Sharp, Janet, N157 Lagomarcino, Iowa State University, Ames, IA 50011	89
Sharp, William, Southern Illinois University, College of Education, Wham Bldg., Carbondale, IL 62901	68
Sheehan, Janet, Northern Illinois University	66
Sheridan, E. Marcia, Indiana University-South Bend, Division of Education, 1825 Northside Boulevard, South Bend, IN 46615	63, 88
Shim, Minsuk K., CPRD/IGPA, University of Illinois, 1002 West Nevada Street, Urbana, Illinois 61801	20
Shroyer, Gail, Kansas State University	85
Simpson, Peggy, University of Cincinnati, Cincinnati, Ohio	28, 78, 84
Siudzinski, Lee J., Kaukauna Area School District, Kaukauna, WI 54130	35
Smith, David W., Lake Park District 108, Roselle, IL	60
Smith, Everett V., University of Oklahoma, Dept. of Educational Psychology, 820 Van Vleet Oval, Room 321, Norman, OK 73019	66
Smith, M. Cecil, Northern Illinois University, 425 Leonard Avenue, DeKalb, IL 60115	23, 77
Smith, Maureen E., Educational Foundations,University of Wisconsin-Oshkosh, 800 Algoma Blvd., Oshkosh, WI 54901	79
Smith, Richard, MarionJoy Rehabilitation Hospital, Three Wheaton Center, #502, Wheaton, Illinois 60187	15, 33, 58
Smith, Sharon, Bowling Green State University	68
Smith, Sonja J., Mount Vernon Nazarene College, 800 Martinsburg Road, Mount Vernon, Ohio 43050	54, 82
Soderstrom, Irina, Southern Illinois University at Carbondale, Dept. of Educational Psychology & Special Education, Carbondale, IL 62901-4618	93
Sparks, Rozanne, Pittsburg State University, 215C Hughes Hall, Pittsburg, KS 66762	45
Sparks, Richard, Mt. St. Joseph	52
Sparrow, Kathy, Akron Public Schools, Akron, Ohio	1, 15, 94
Speaker, Kathryne M., Center for Teaching Excellence,Yardley, PA 19067	26, 83
Speicher, Doris, Ball State University, Teachers College, Muncie, IN	52
Springfield, H. Lynn, Arkansas Special Education Resource Center, 1405 N. Pierce, Suite 101, Little Rock, Arkansas 72207	52
Sputa, Cheryl L., Ball State University, Department of Educational Psychology, Muncie, IN 47306-0595	71
Staggs, Jerry D., The Ohio State University, 1945 N. High Street, Columbus, OH 43210	62
Staton, David, Iowa State University	19, 46
Stone, Gregory E., The National Certification Corportation, 1046 West Catalpa, 2E, Chicago, IL 60640	36
Strand, Terri, Strand Consulting Services, 4206 N. Triumvera Drive, Glenview, IL 60025	56
Streitenberger, Susan, Ohio Department of Education, Ohio	32
Struyk, L. Ruth, Northern Illinois University, LEPS/ Instructional Technology, DeKalb, IL 60115	88
Sudzina, Mary R., The University of Dayton, Department of Teacher Education, Dayton, Ohio 45469-0525	25, 63
Sundbye, Nita, University of Kansas, B101 Bailey Hall, CETE, Lawrence, KS 66045-2327	47
Surber, John, University of Wisconsin-Milwaukee, Milwaukee, Wisconsin 53223	21

Presenter/Session Index

Presenter	Session
Swenson, Jeff, Raymond Park Middle School, Indianapolis, IN	60
Thibo Karns, Jeanne, University of Nebraska-Lincoln, Lincoln, NE	52
Thomas, Rebecca, Western Michigan University, Kalamazoo, MI 49008	38
Thomas, Anne Marie, The Ohio State University, Educational Services and Research, 287 Arps Hall, 1945 N. High Street, Columbus, Ohio 43210	74
Thompson, Jay C., Department of Educational Leadership ,Teachers College 915, Ball State University,Muncie, Indiana 47306	15, 52, 60
Thompson, Johnnie, Wichita State University, 1845 Fairmount, Box 28, Wichita, KS 67260	89
Thorson, Annette, Ohio Dominican College, Department of Education, 1165 Forest Glen, Westerville, Ohio 43081	18
Timm, Joan, University of Wisconsin-Oshkosh, College of Education and Human Services, 800 Algoma Boulevard, Oshkosh, Wisconsin 54901	15, 71, 79
Timmer, Suzanne, Coordinator, Office of Field Studies, Western Michigan University, Sangren Hall, Kalamazoo, Michigan 49008	18
Towne-Hankes, Judith, University of Wisconsin-Oshkosh, 800 Algoma Boulevard, Oshkosh, Wisconsin 54901	21
Treaster, Mary, Fairfield West Elementary School	91
Turk, Randall, Wichita State University, Campus Box 142, Wichita, KS 67260	91
Turner, Lenn, Worthington Estates Elementary School	32
VanZomeran, Wayne, Northwest Missouri State University, Psychology Department, Maryville, MO 64468	15, 23
Vaughn, Vicki, Burris Laboratory School, Muncie, IN	60
Vincent, Zana, Central Ohio Regional Professional Development Center, Ohio	32
Vontz, Tom, Teacher Education Laboratory, Indiana University, School of Education, Bloomington, IN 47405	30, 65
Waechter, Donna R., Akron Board of Education, 3179 N. Dover Road, Silver Lake, Ohio 44224	19, 62
Walberg, Herbert W.	12
Walker, Kiersten, Wichita State University, Wichita, KS	52
Walkosz,Vivian, Northern Illinois University	2
Walter, James, Southern Illinois University	68
Wang, Aimin, Miami University, Department of EDP, Oxford, Ohio 45056	52
Ward, Patricia, Miamisburg High School	80
Wayson, William, Synergetic Systems	32
Weisenbach, E. Lynne, University of Indianapolis, 1400 East Hanna Avenue, Indianapolis, IN 46227	64
Wesson, Linda, Youngstown State University	92
Wharton, Barbara I., The Ohio State University, 287 Arps Hall, 1945 N. High Street, Columbus, Ohio 43210	87
Wiedmer,Terry L., Ball State University, Educational Leadership Department, Teachers College Room 915, Muncie, IN 47306	52, 62, 71
Wigle, Stanley, The University of Tennessee-Martin, Martin, TN	46, 52
Wilcox, Daryl, Wayne State University	46
Wilcox, Grace, Miamisburg High School	80
Wilkins-Canter, Elizabeth A., Eastern Illinois University, Secondary Education and Foundations, 600 Lincoln Avenue, Charleston, Illinois 61920	17
Williams, Don, The Ohio State University-Columbus, Columbus, Ohio	29
Williams, Pamela C., Meharry Medical College	71
Wilson, Maureen, Ohio State University, 287 Arps Hall, 1945 N. High Street, Columbus, Ohio 43210	74

Presenter	Session
Wineberg, Lenore, University of Wisconsin-Oshkosh, 800 Algoma Boulevard, COEHS/NE 504, Oshkosh, WI 54901	45
Winterfeldt, Henry, College of Education & Human Services, University of Wisconsin-Oshkosh, Oshkosh, WI 54901	54
Witteman, Barbara, Concordia College, Education Department, Moorhead, MN 56562	55, 83
Whittier, Michael, Southern Illinois University, Carbondale, IL 62901	77
Woolfolk Hoy, Anita, Ohio State University, 253 Arps Hall, 1945 N. High Street, Columbus, Ohio 43210	67
Wothke, Werner, SmallWaters, Inc., 1507 East 53rd Street, #452, Chicago, Illinois 60615-4509	4
Wright, Benjamin D., University of Chicago, Chicago, IL	58
Wyler, Kris M., Stark County Educational Service Center, 2100 38th Street NW, Canton, OH 44709	31
Wypiszynski, Gregory B., University of Wisconsin-Oshkosh, Oshkosh, WI 54901-3664	35
Yahnke, Sally, Kansas State University	85
Yoo, Soonhwa, The Ohio State University, 287 Arps Hall, 1945 N. High Street, Columbus, Ohio 43210	87
Yusuf, Mian Muhammad, Teacher Education Department, Weber State University, 1304 University Circle, Ogden, Utah 84408-1304	6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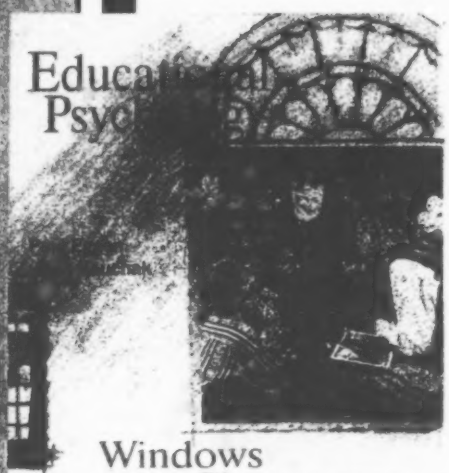

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The University of Akron, Akron, Ohio

Special Issue on Regression Analyses
Guest Editor: Isadore Newman, The University of Akron

957

From Your Editorial Team

With this issue, the current editorial team finishes its three-year term. We each owe thanks and appreciation to several different sources of help and inspiration:

To our authors, thanks for submitting high quality material.

To our reviewers, thanks for performing the difficult task of reviewing the scholarship of colleagues. For a complete list, please see page 28.

To our institutions, The Ohio State University, Duquesne University, and The University of Wisconsin-Milwaukee, thanks for supporting us with time and space.

To each other, thanks for the mutual support.

To our MWERA readers, thanks for reading! That, after all, is the main purpose of this endeavor.

Ayres D'Costa, *Sue Brookhart*, and *John Surber*

On The Cover

The University of Akron is Ohio's third-largest university, with a total enrollment of approximately 30,000 students. The University's 10 academic colleges offer 154 baccalaureate, 47 master's, and 17 doctoral degree programs. A leader in rubber and polymer research since 1909, UA is considered the world's premier synthetic polymer research institution. The University was founded in 1870 as Buchtel College, later was named The University of Akron, and became part of Ohio's state-assisted university system in 1967.

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Missing Cells in Developmental Research
John Delane Williams, The University of North Dakota
2

Hierarchical Modeling Techniques to Analyze Contextual Effects: What Happened to the Aptitude by Treatment Design?
Janet K. Sheehan and Tianqi Han, Northern Illinois University
4

Semi-Partial Correlations: I Don't Need Them; You Can Have Them
Thomas R. Knapp, The Ohio State University
8

Precision Power and Its Application to the Selection of Regression Sample Sizes
Gordon P. Brooks and Robert S. Barcikowski, Ohio University
10

Regression Analyses for ABAB Designs in Educational Research
T. Mark Beasley, St. John's University, New York
18

The Use of Multiple Regression Models to Determine if Conjoint Analysis Should Be Conducted on Aggregate Data
John W. Fraas, Ashland University
Isadore Newman, The University of Akron
24

Estimating the True Accuracy of Regression Predictions
Richard B. Darlington, Cornell University
29

Categorical or Continuous Interaction?
Keith McNeil, New Mexico State University
Isadore Newman, The University of Akron
32

Index of Authors: 1994 -'96
35

Index of Articles: 1994 -'96
36

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Missing Cells in Developmental Research

John Delane Williams, The University of North Dakota

Abstract

The use of missing cells in longitudinal research is addressed and a sample is given using multiple linear regression for the solution. Applications of longitudinal research are discussed wherein logically missing cells occur.

The use of missing cells in educational/psychological research would appear to be an area to be avoided; this may be due to the perceived difficulty (or perhaps presumed impossibility) of attaining a useful result. Yet missing cells occur naturally in many settings. In many cases, the cells are missing for logical reasons. As an example of missing cells in an educational situation, if student absences are recorded over a two-year period at a middle school, the following data may be collected:

Table 1
Data Collection for Two-Year Study

	Year 1	Year 2
Grade 6	Cell 1	Cell 2
Grade 7	Cell 3	Cell 4
Grade 8	Cell 5	Cell 6

Also, since persons (typically) advance one year at a time, Year 1 sixth graders (Cell 1) become Year 2 seventh graders (Cell 4); so also, Year 1 seventh graders (Cell 3) become Year 2 eighth graders (Cell 6). The data in Table 1 can be recast into a Cohort-by-Year analysis.

Table 2
Cohort by Year Analysis for Longitudinal Data

	Year 1	Year 2
Cohort 1	Cell 1 (6th Grade)	Cell 4 (7th Grade)
Cohort 2	Cell 3 (7th Grade)	Cell 6 (8th Grade)
Cohort 3	----------	Cell 2 (6th Grade)
Cohort 4	Cell 5 (8th Grade)	----------

Note that in Table 2, two cells are missing; Cohort 3 (6th graders; Year 2) are not measured in Year 1, because they have not yet begun middle school. Also, Cohort 4 (8th grade, Year 1) are not measured in Year 2 because they are no longer in middle school.

One additional layout can be considered for the cells in Table 1, Cohort-by-Grade. See Table 3.

Table 3
Cohort x Grade for Developmental Data

	Grade 6	Grade 7	Grade 8
Cohort 1	Cell 1 (Year 1)	Cell 4 (Year 2)	----------
Cohort 2	----------	Cell 3 (Year 1)	Cell 6 (Year 2)
Cohort 3	Cell 2 (Year 2)	----------	----------
Cohort 4	----------	----------	Cell 5 (Year 1)

These three models taken together are often referred to as the Schaie (1965) models (though Schaie did not actually analyze data with missing cells). Also, since the same persons are used in Cohorts 1 and 2, more precision can be gained by using each person as their own control. In terms of using a regression solution, a person variable can be obtained by summing the criterion measure at both measurement periods: $P = Y_1 + Y_2$ where

Y_1 = the Year One criterion measure (here, number of absences);

Y_2 = the Year Two criterion measure.

For persons in the cohorts measured once, P = 0. (See Pedhazur, 1977; Williams, 1977b; Newman, Benz, & Williams, 1980; Williams & Williams, 1985; Williams, 1991).

For a complete solution to this problem, Williams (1991) shows a regression solution. It would be helpful to

address one of the layouts with missing cells to get a flavor of the solution. To fully analyze the data, all three layouts need to be completed. Also, no assumption is made regarding proportionality; it would most likely be that such data will be disproportional to some extent.

Several binary variables can be useful. Six binary variables can be constructed for cells of the form $X_i = 1$ if from Cell i, 0 otherwise. For example, for i = 1, $X_1 = 1$ if from Cell 1, 0 otherwise. Six such cell variables can be defined. A full model (or cells model) could be given by:

$$Y = b_0 + b_1X_1 + b_2X_2 + ... + b_5X_5 + e_1. \quad (1)$$

Note that equation 1 uses only the first five cells, as the sixth cell is defined as not being a member of the first five cells. Also Y refers to a criterion score, whether it be Y_1 or Y_2.

The Person effect can be found as

$$Y = b_1P + e_2. \quad (2)$$

where P is the summed variable described earlier.

A year variable can also be used: $X_7 = 1$ if from Year 1, 0 if from Year 2. The year model can be given as:

$$Y = b_0 + b_7X_7 + e_3. \quad (3)$$

The Cohort effect can be found as:

$$Y = b_0 + b_8C_1 + b_9C_2 + b_{10}C_3 + e_4. \quad (4)$$

where the C_i's represent cohorts 1, 2, and 3 as binary variables, omitting (as redundant) Cohort 4.

The restricted model for the interaction effect for Cohort by Year can be found as

$$Y = b_0 + b_{11}X_7 + b_{12}C_1 + b_{13}C_2 + b_{14}C_3 + e_5. \quad (5)$$

Typically, the sum of squares can be found directly from the output of most general purpose multiple regression programs. They can also be found as:

$(SS_T)(R_2^2)$ for the Person effect;

$(SS_T)(R_1^2)$ for the Cell effect;

$(SS_T)(R_3^2)$ for the Year effect;

$(SS_T)(R_4^2)$ for the Cohort effect; and

$(SS_T)(R_1^2 - R_5^2)$ for the Interaction effect.

The hypotheses tested here are weighted for cell size (Jennings, 1967; Williams, 1972; Williams, 1977a). For unweighted cell sizes (Timm & Carlson, 1975) see Williams (1991). Only one part of the analysis is shown here, for the Cohort x Year layout. The Grade x Year layout presents no new complications, but the Year x Cohort layout has several missing cells, precluding finding a Year x Cohort interaction.

Other Uses of Missing Cells

The regression solution for one missing cell in a 2 x 3 layout was shown in Williams (1981). Logically missing cells were addressed in Williams and Wali (1979) together with the way multiple missing cells can affect degrees of freedom.

An example of the Williams (1991) regression solution to the Schaie (1965) models was done in Williams and Klug (in press). The longitudinal data addressing cognition and aging collected by Schaie (1983) wherein persons above age 25 were tested on the *Thurstone Primary Mental Abilities* tests in the Seattle study. The study was begun in 1956 and persons were tested/retested every seven years. To this date, six testing periods have been completed. Williams and Klug (in press) used the first four testing periods, contrasting cross-sectional outcomes with longitudinal sequential outcomes (where persons were available on multiple occasions) and longitudinal cross-sectional groups which were persons chosen at each time of measurement. The latter two designs were analyzable by methods described by Williams (1991); all three methods gave clearly different outcomes; the cross-sectional method yielded results that could be construed to be consistent with Birren (1959) and Salthouse's (1985) theory of cognitive decline with aging. The longitudinal sequential method showed that cohorts were relatively stable over time, showing decline for the most part for advanced ages (> 80). The longitudinal cross-sectional method yielded results intermediate to the other two.

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continued on page 7

Hierarchical Modeling Techniques to Analyze Contextual Effects: What Happened to the Aptitude by Treatment Design?

Janet K. Sheehan and Tianqi Han, Northern Illinois University

Abstract

This article contrasts two analytical methods for making cross-level inferences between individual-level factors and group-level factors in school-effectiveness research, the aptitude by treatment interaction design and hierarchical linear modeling. Although the aptitude by treatment interaction method is suitable for making cross-level inferences when the intraclass correlations are low, partitioning the interaction into within-and between-contexts components is recommended to discern if the interaction is due to confounding contextual effects.

Hierarchical linear modeling is the recommended technique when intraclass correlations are high, because the parameters are assumed to be unique for each context and are modeled accordingly. Further, the shrinkage estimates of the parameters are more precise than those estimated through ordinary least squares analysis.

Contextual Effects

Educational data are often collected at the individual level, yet a cluster sampling design is used which involves first selecting groups of schools and/or classes and subsequently sampling individuals. This results in hierarchical data in which some variables are measured at the individual level and others at the group level. Since the group-level variables are nested within specific contexts such as classes, schools, or neighborhoods, it is reasonable to assume that the context itself exerts some influence on individual-level variables resulting in positive intraclass correlations. If the context is ignored in the statistical model, then there is the strong possibility of confounding effects operating at the class, school, or neighborhood level. These are known as contextual effects.

A plausible school-effects study will be considered as an example of contextual effects. In this example the purpose is to investigate the effects of instructional technology (a nominal variable reflecting multimedia and computer technology, computer technology only, and no technology) in the schools on pupil achievement. It is further expected that the effects of instructional technology will be different depending on the type of home environment the student comes from (a composite variable including such factors as the time spent talking with parents about schoolwork, reading at home, using educational computer programs, and watching educational television). The outcome is the student's composite score on a standardized achievement test. Achievement is being modeled as a function of an individual-level variable, home environment, and a group-level variable, level of instructional technology. However, there are contextual effects operating at the school level that may influence achievement other than instructional technology. The level of violence in the schools, the proximity of the school to a major university, and whether the school is public or private are a few of the other possible school-level influences on achievement. If we were able to randomly assign schools to the different instructional technologies, we could assume that over the long run, the influence of these contextual variables on achievement would be equivalent for each assigned group. However, the practice of interest is not often randomly assigned to the classes or schools in educational research, and therefore is confounded by other contextual effects.

The purpose of this paper is to contrast two analytical methods, the aptitude by treatment interaction design (ATI) and hierarchical linear modeling (HLM), for making cross-level inferences between individual-level factors and group-level factors. This article summarizes the important issues surrounding the use of each of these methods and discusses the appropriateness of each technique in school-effectiveness research.

Aptitude by Treatment Interaction

One common analysis method that has been used for models in which there is both an individual-level predictor and a group-level predictor is the ATI design. In the ATI model, the individual-level outcome (achievement) is modeled by an individual-level predictor (aptitude), a group-level treatment, and the interaction of aptitude and treatment. The interaction term is usually of most interest, because it tests

whether the relationship between aptitude and achievement varies for the different treatment groups. Using the school-effects study previously mentioned, the ATI is the difference in the home environment-achievement relationship among the different levels of instructional technology.

The conventional form of the ATI parameter model that is employed in much educational research is

$$Y_{ij}=\beta_0+\beta_1X_i+\beta_2T_j+\beta_3X_iT_j+\varepsilon_{ij} \quad (1)$$

In this model each individual's outcome score is a function of aptitude (X), and treatment group (T) and the interaction of treatment and aptitude (XT). However, this model disaggregates the data to the individual level, since the context (classes or schools) are not included in the model. The major problem that disaggregation poses is that the data violate the assumption of independence of observations. Therefore positive intraclass correlations are being ignored. This is a nontrivial matter resulting in underestimated standard errors and inflated type I error in tests of significance (Bryk & Raudenbush, 1992; De Leeuw & Kreft, 1986; Draper, 1995; Cheung, Keeves, Sellin & Tsoi, 1990).

In the home environment/instructional technology example, the conventional ATI model would be appropriate if we were sure that the different schools within each type of instructional technology were of similar contexts and interacted with home environment in a consistent fashion. However, the conventional model would not be applicable if there were contextual effects. A significant interaction due to contextual effects may erroneously be attributed to other group-level variables. Conversely, the interaction of aptitude by treatment may be masked by different contexts. This occurs because in the conventional form of the ATI model we assume the β_3 to be equal for all contexts (classes or schools) within each treatment or practice. However, this assumption would often not be appropriate because of differing contextual effects in the classes or schools. In this example, the interaction of instructional technology and home environment on achievement may differ depending on another school-level variable such as the school climate (a composite variable reflecting such factors as school absenteeism, student violence, alcohol and illicit drug use, gang prevalence, weapon prevalence, and teacher abuse). Perhaps a poor school climate would mask the interaction of type of instructional technology and home environment. In schools with a good school climate, students from an impoverished home environment might benefit more from the use of instructional technology than students from an enriched home environment. However, when the school climate is poor, the use of instructional technology may not have a beneficial effect on achievement for any of the students. In this example we cannot assume that the ATI effect is consistent for different schools, because school climate masks the ATI effect in some schools.

Cronbach and Webb (1975) addressed this problem of confounding contextual effects by partitioning the ATI interaction into between-context and within-context components. The between-context component is determined by aggregating the data to the class or school level for the regression analysis. Hence the mean of Y is regressed on the mean of X, the treatment, and their interaction (2). The within-context regression is formed by first deviating the scores of the individual-level predictor from the class or school mean ($X_{ij}-\bar{X}_j$), and regressing the outcome on the deviated scores, the treatment variable, and their interaction (3).

$$\bar{Y}_j=\beta_0+\beta_1\bar{X}_j+\beta_2T_j+\beta_3\bar{X}_jT_j+\varepsilon_j \quad (2)$$

$$Y_{ij}=\beta_0+\beta_1(X_{ij}-\bar{X}_j)+\beta_2T_j+\beta_3(X_{ij}-\bar{X}_j)T_j+\varepsilon_{ij} \quad (3)$$

Cronbach and Webb demonstrated that very different conclusions can be reached when the conventional ATI analysis is replaced with such a partitioned analysis. They disconfirmed the findings of a previous study which had detected a significant ATI for the effects of instructional method on the aptitude-math achievement relationship (Cronbach & Webb). Cronbach and Webb's reanalysis of these data found that there was no evidence for a within-classes ATI and no conclusion could be reached about the between-classes analysis.

The within-context ATI is most commonly of interest when one wants to investigate the interaction effect of some type of class or school practice and aptitude on an outcome measure. In the example outlined previously the within-context interaction would be the difference in the home environment-achievement relationship between students receiving different levels of instructional technology, when controlling for the average home environment students in the school come from. The between-context model, on the other hand, would be the difference in the average home environment-achievement relationship among the different levels of instructional technology. Since scores are aggregated to the group level, the within-school information is lost. Additionally, aggregation bias often results in a dramatic increase in the correlation between variables (Robinson, 1950). Despite this limitation, the separate analyses approach used by Cronbach and Webb (1975) and detailed by Cronbach and Snow (1977) can be effectively employed to interpret ATI effects from hierarchically nested samples, particularly when intraclass correlations are low.

Multilevel Modeling

Another technique which has been used to make cross-level inferences in school-effects study is multilevel modeling. Multilevel modeling has particular merit when analyzing data which has high intraclass correlations due to the hierarchically nested structure of the data. When analyzing data with intraclass correlations using conventional regression analysis, the data are forced to fit a model that does not reflect how they were collected. Conversely, multilevel tech-

niques draw strength from appropriately modeling the data at each level of the sampling design. In multilevel modeling a separate micro-level model is defined for each macro unit. In a school-effects study this would mean that within-school regression coefficients are modeled by school-level variables (De Leeuw & Kreft, 1986).

Random Coefficients Models

A particular type of multilevel model that is often used to make cross-level inferences is one in which the regression coefficients are not assumed to be constant for all contexts. In the multilevel analysis literature these models are alternately called random line models, slopes and intercepts as outcomes, and random coefficient models. These multilevel models circumvent a limitation of the ATI separate analyses approach, the assumption that the interaction is assumed to be homogeneous for all contexts within a particular group. However, logic would dictate that the ATI would be different across schools, because strategies and policies, as well as environmental factors, often vary from school to school. In random coefficient regression models, the parameters are allowed to differ over the different schools and are treated as a function of school characteristics and random but unique school variations that are assumed to be constant in the ATI model.

In addition to providing a more realistic model of the data, the random coefficients model is technically also an improvement over the conventional multiple regression model because it calculates the correct standard errors. Moreover, the random coefficients model improves the estimation of the parameters for the separate schools. An empirical Bayes estimation procedure is used to weight the regression coefficient estimates of each school by a reliability coefficient calculated for each school. This process is known as shrinkage because the estimates are "shrunk" toward the estimated group mean coefficients. Those schools providing less reliable estimates experience the most shrinkage (Cheung, Keeves, Sellin & Tsoi, 1990; Raudenbush, 1988). The resulting shrinkage estimates are more precise parameter estimates than those generated through ordinary least square methods.

The simplest random coefficients model is one in which there is an individual-level predictor (X), but no group-level predictors (Bryk & Raudenbush, 1992).

$$Y_{ij}=\beta_{0j}+\beta_{1j}(X_{ij}-\bar{X}_j)+r_{ij}$$
$$\beta_{0j}=\gamma_{00}+u_{0j}$$
$$\beta_{1j}=\gamma_{10}+u_{1j} \qquad (4)$$

In a school-effects study, the first equation is the micro-level model, in which a student-level outcome variable is a function of a student-level predictor, $(X_{ij}-\bar{X}_j)$, and the unique effect of the student, r_{ij}. The subsequent equations are the macro-level models which illustrate how the microparameters, β_0 and β_1 are modeled by school-level effects. β_{0j} is modeled as a function of the average outcome across the schools, γ_{00}, and the unique effect of school j on the mean outcome, m_{0j}. β_{1j} is modeled as a function of the average slope of the predictor-criterion relationship across the schools, γ_{10}, and the unique effect of each school j on the predictor-criterion slope, m_{1j}. This model can be extended to include other variables at both the micro-level, as well as the macro-level. Therefore, these models can be very useful for modeling cross-level inference. A random coefficients model that would appropriately partition the ATI into within- and between-context components is (Raudenbush, 1989):

$$Y_{ij}=\beta_{0j}+\beta_{1j}(X_{ij}-\bar{X}_j)+r_{ij}$$
$$\beta_{0j}=\gamma_{00}+\gamma_{01}\bar{X}_j+\gamma_{02}T_j+\gamma_{03}\bar{X}_jT_j+u_{0j}$$
$$\beta_{1j}=\gamma_{10}+\gamma_{11}T_j+u_{1j} \qquad (5)$$

In this multilevel model, γ_{03} is the between-contexts interaction, while γ_{11} is the within-contexts interaction[1]. Therefore, the ATI interaction can be partitioned into within- and between-contexts components, while still allowing for unique variation among schools. Other contextual variables can also be included in the macromodels to account for some of the variation unique to each school. For instance, school climate might be included in the example previously given to determine if the interaction between home environment and instructional technology is masked by school climate.

Recommendations and Conclusions

The ATI analysis method is suitable for making cross-level inferences when the intraclass correlation is low, and therefore the macro-level units are assumed to have a constant predictor-criterion relationship within each group. If there are any contextual effects, the partitioning of the interaction into within- and between-context components can aid in determining what factors are contributing to the interaction.

Hierarchical linear modeling is the recommended technique when intraclass correlations are high, and are not assumed to have a constant predictor-criterion relationship within each group. The main advantage of HLM techniques in this situation is that the parameters are assumed to be unique for each context and are modeled accordingly. Further, the shrinkage estimates of the parameters are more precise than those estimated through ordinary least squares analysis.

Whichever method is used to analyze the ATI in school-effects studies, one must keep in mind that most school-effects research is quasi-experimental. Students are not randomly assigned to schools, and schools are not often randomly assigned to treatment or practice. Therefore, confounding effects operating at the student level and the school

[1] Simplifying into one equation we arrive at $Y_{ij}=\gamma_{00}+\gamma_{01}\bar{X}_j+\gamma_{02}T_j+\gamma_{03}\bar{X}_jT_j+\gamma_{10}(X_{ij}-\bar{X}_j)+\gamma_{11}(X_{ij}-\bar{X}_j)T_j+u_{0j}+u_{1j}(X_{ij}-\bar{X}_j)+r_{ij}$

level may bias variance estimates and parameter estimates. This problem is exacerbated when one cannot define a set of reliable and valid measures to assess the school practice that is of interest (Raudenbush & Willms, 1995).

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continued from page 3

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Semi-Partial Correlations: I Don't Need Them; You Can Have Them

Thomas R. Knapp, The Ohio State University

Prologue

I have been teaching statistics and associated topics (measurement, research design) for 37 years and have contributed to the methodological literature on such matters. During that time I have managed to get along without knowing or caring very much about a variety of techniques, most notably exploratory data analysis, Bayesian inference, expected values of mean squares, and item response theory. In the essay that follows I talk about another one: semi-partial correlations.

What are semi-partial correlations?

As explained very nicely by Cohen and Cohen (1983), Darlington (1990), and others, a semi-partial correlation between an independent variable X and a dependent variable Y, is the correlation between Y and the "residualized" variable X.W for which the effect of a covariate W on X has been removed (partialled out, statistically controlled, etc.) from X (but not from Y). This semi-partial correlation (called a "part" correlation by some authors, e.g., McNemar, 1962) and its square are said to be the best indicators of an independent variable's "unique" contribution to the prediction or explanation of the dependent variable. Darlington lists five ways for determining the relative order of importance of independent variables in a multiple regression analysis, and he comes down in favor of focussing on semi-partial correlations.

Cohen and Cohen include in their text several Venn diagrams, or "ballantines" (named after the logo for a beer that is no longer brewed), that are alleged to be helpful in determining "variance accounted for" and in distinguishing semi-partial correlations from partial correlations.

Why I don't need them

There are several reasons why I have little or no interest in semi-partial correlations. First and foremost, an independent variable's semi-partial correlation with a dependent variable can be shown to be mathematically identical to the square root of the difference in R-squares for the "full model" hierarchical regression in which the variable under consideration is entered last and the "reduced model" that includes all of the other variables (covariates) that are to be statistically controlled. (See, for example, Pedhazur (1982), pp. 119-123.) I am a strong advocate of hierarchical regression analysis. I believe that the most interesting educational research questions are of the form: "What is the effect of _____ over and above the effect of _____?". I accordingly find change in R-square to be a more intuitively appealing notion than a squared semi-partial correlation coefficient, and since the two are mathematically identical I prefer the former.

Another reason I don't like to emphasize semi-partial correlations has to do with the concept of a residualized variable. Intellectualizing raw variables, deviation variables, standardized variables, log-transformed variables, etc. is difficult enough. The notion of "X without W", which underlies the proper interpretation of a semi-partial correlation, boggles my mind.

A third reason why I don't get excited about semi-partial correlations is that unlike partial correlations they seem to be useful only in regression analyses. Everybody cares about the partial correlation between, say, height and reading achievement, with age partialled out from both variables, as a device for detecting spurious relationships. But semi-partial correlations only arise in a regression context where one of the variables is a response and all of the others are explanatory.

A fourth reason has to do with those "ballantines". The variance of Y is not a thing that can be sliced up; it is an abstract statistical entity. By depicting overlapping circles with one piece "accounted for" by this and another piece "accounted for" by that, there is a serious danger of imputing causality that may not be warranted (in most non-experimental research, for example).

A fifth reason, associated with my second reason, is that I already have enough important statistical concepts to clutter up my brain without adding another one unless it is absolutely necessary. As Yogi Berra once said, a baseball player has just so many hits coming to him each year, so why waste any of them in spring training.

You can have them (if you want them): An example

Consider the simple hypothetical example exploited by Darlington in Chapter 2 of his excellent regression text. A researcher is interested in the effect of exercise on weight

loss over and above (statistically controlling for) food intake. The sample data for 10 subjects are displayed in Table 1.

Table 1.

Some data for illustrating semi-partial correlation (Darlington, 1990, p. 33)

ID	Exercise (X)*	Food intake (W)*	Weight loss (Y)
1	0	2	6
2	0	4	2
3	0	6	4
4	2	2	8
5	2	4	9
6	2	6	8
7	2	8	5
8	4	4	11
9	4	6	13
10	4	8	9

* Darlington calls these two variables X_1 and X_2, respectively, but I prefer the X and W notation.

Darlington provides the reader with eight informative plots of the data. The first is a simple scatter-plot of Y against W. The next two are the conventional three-dimensional plots, one without and one with the best-fitting plane superimposed. The fourth figure again plots Y against W, with the X values shown by parallel lines in the body of the figure; the fifth figure plots Y against X, with the W values shown by parallel lines. The sixth figure is a simple scatter-plot of X against W. The seventh figure plots Y against W.X; and the eighth figure, which is the key figure regarding the semi-partial correlation for the research question, plots Y against X.W.

I need only the first three figures to make geometrical sense of what is going on. (How about you?) And algebraically (or arithmetically) I need the Pearson r and its square for the reduced-model first plot (they are .047 and .002, respectively—the covariate W actually had very little effect) and the multiple R and its square for the full-model second and third plots (they are .915 and .838, respectively). Therefore the magnitude of the effect of X on Y over and above W is given by the difference between the .838 and the .002 (.836, which is equal to the squared semi-partial correlation) and/or the square root of that difference (.914, which is the semi-partial correlation itself).

At the end of Chapter 2 Darlington gives equivalent formulas for semi-partial correlations, as well as formulas for partial correlations and beta weights. I don't need those formulas for semi-partial correlations (do you?), but in fairness to those who do, it is instructive to note the similarities among the formulas for semi-partial correlations, partial correlations, and beta weights (same numerators, different denominators).

Later in his text Darlington discusses hypothesis testing and estimation for various regression statistics (Chapter 5) and provides his argument for preferring semi-partial correlations (Chapter 9) as indicators of the relative importance of independent variables in a regression (as opposed to change in R-square and three other methods for ranking regressors). Reference to semi-partial correlations per se is interestingly absent in Chapter 5, but he does provide the formula for testing the significance of change in R-square (which implicitly tests the significance of a semi-partial correlation).

Epilogue

The probability is very small that the foregoing remarks will sway all readers of this journal to my point of view. I am a methodological loner (you should hear me expound on my idiosyncratic notion of validity!) and I rather enjoy being in that position. But if nothing else I hope that this essay may serve to generate some interesting discussion. Isn't that what it's all about?

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Precision Power and Its Application to the Selection of Regression Sample Sizes

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Abstract

Because of contradictions among the various methods, sample size selection in multiple regression has been problematic. For example, how does one reconcile the difference between a 15:1 subject-to-variable rule and a 30:1 rule? The purpose of this paper is to analyze the advantages and disadvantages of the various methods of selecting sample sizes in regression. A discussion of the importance of cross-validity to prediction studies will be followed by descriptions of the three categories of sample size methods: cross-validation approaches, rules-of-thumb, and statistical power methods. A rationale will then be developed for the application of precision power to multiple regression, leading to the presentation, through multiple examples, of the precision power method for sample size selection in prediction studies.

Most researchers who use regression analysis to develop prediction equations are not only concerned with whether the multiple correlation coefficient or some particular predictor is significant, but they are also especially concerned with the generalizability of the regression model developed. However, the process of maximizing the correlation between the observed and predicted criterion scores requires mathematical capitalization on chance; that is, the correlation obtained is a maximum only for the particular sample from which it was calculated. If the estimate of the population multiple correlation decreases too much in a second sample, the regression model has little value for prediction. Because of this possibility, researchers must ensure that their studies have adequate power so that results will generalize; the best way to ensure this power, and therefore stable regression weights, is to use a sufficiently large sample.

Despite encouragement from scholars, many researchers continue to ignore power in their studies (Cohen, 1992; Sedlmeier & Gigerenzer, 1989; Stevens, 1992b). This situation is compounded for multiple regression research even though several methods exist for choosing sample sizes for power. These methods can be grouped loosely into three categories: rules-of-thumb, statistical power methods, and cross-validation methods. Unfortunately, as Olejnik noted in 1984 and was confirmed recently (Brooks & Barcikowski, 1994), many regression textbooks do not discuss the issue of sample size selection (e.g., Dunn & Clark, 1974; Kleinbaum, Kupper, & Muller, 1987; Montgomery & Peck, 1992; Weisberg, 1985) or simply provide a rule-of-thumb (e.g., Cooley & Lohnes, 1971; Harris, 1985; Kerlinger & Pedhazur, 1973; Tabachnick & Fidell, 1989), possibly because there are problems and contradictions among the various methods.

For example, how does one reconcile differences between a statistical power method that suggests 16 subjects and a 15:1 subject-to-variable ratio rule that recommends 60? Furthermore, the many rules-of-thumb lack any measure of effect size, which is generally recognized as a critical element in the determination of sample sizes. Cohen's (1988) methods are derived from a fixed model and statistical power approach to regression; however, a random model and cross-validation approach, like Park and Dudycha's (1974), may be more appropriate in the social sciences, where a prediction function is often desired. This is because generalizability is the primary consideration for the development of a prediction model, whereas statistical power is the main concern when regression is used to test hypotheses about relationships between variables.

Therefore, the purpose of this paper is to analyze the advantages and disadvantages of the various methods of selecting sample sizes in regression. A discussion of the importance of cross-validity to prediction studies will be followed by descriptions of the three categories of sample size methods: cross-validation approaches, rules-of-thumb, and statistical power methods. A rationale will then be developed for the application of precision power to multiple regression, leading to the presentation, through multiple examples, of the precision power method for sample size selection in regression studies designed to develop prediction models.

Cross-Validation and Shrinkage

Because the expected value of the sample multiple correlation (i.e., an average correlation over many samples) is an overestimate of the population multiple correlation, researchers have employed a number of methods to "shrink" R^2 and thereby provide better estimates of true population multiple correlations. Formula methods of shrinkage are typically preferred to empirical cross-validation (data-splitting) so that the entire sample may be used for model-build-

ing. Indeed, several common formula estimates have been shown superior to empirical cross-validation techniques (Cattin, 1980a; 1980b; Kennedy, 1988; Murphy, 1982; Schmitt, Coyle, & Rauschenberger, 1977).

Two types of formulas have been developed: shrinkage estimates and cross-validity estimates (see Table 1). Shrinkage formulas are used to estimate more accurately the squared population multiple correlation, ρ^2, also called the coefficient of determination. The multiple correlation, ρ, is the correlation between the criterion and the regression function if both are measured in the population (Herzberg, 1969; Stevens, 1992a). For example, a researcher who calculates a sample $R^2 = .3322$ with 121 subjects and 3 predictors might use an adjusted R^2 formula to conclude that, in the population, the multiple correlation between the criterion and the predictors is approximately $\rho = .5613$, since $R_a^2 = .3151$.

Cross-validity formulas, which are based on estimates of the mean squared error of prediction, provide more accurate estimates of the squared population cross-validity coefficient, ρ_c^2. The values of R_c^2, the sample estimates of cross-validity, will vary from sample to sample; however, the expected value of R_c^2 (that is, the average over many samples) approximates ρ_c^2. This cross-validity coefficient can be thought of as the squared correlation between the actual population criterion values and the scores predicted by the sample regression equation when applied to the population or to another sample (Kennedy, 1988; Schmitt et al., 1977). For example, a researcher who calculates a sample $R^2 = .3322$ with 121 subjects and 3 predictors might use a cross-validity formula to calculate the sample cross-validity coefficient as $R_c^2 = .2916$. This cross-validity coefficient implies that the researcher would explain 29%, not 33%, of the variance of the criterion when applying the sample regression function to future samples.

Table 1
Examples of Cross-Validation and Shrinkage Formulas

Formula	Attributed To:
$R_a^2 = 1 - \frac{(N-1)(1-R^2)}{(N-p)}$	Wherry (1931)
$R_a^2 = 1 - \frac{(N-1)(1-R^2)}{(N-p-1)}$	Wherry (1931); Ezekiel (1930); McNemar (1962); Lord & Novick (1968); Ray (1982, p. 69) [SAS]
$R_a^2 = R^2 - \frac{p(1-R^2)}{(N-p-1)}$	Norusis (1988, p. 18) [SPSS]
$R_a^2 = R^2 - \frac{p(1-R^2)}{(N-p')}$	Dixon (1990, p. 365) [BMDP]1
$R_c^2 = 1 - \frac{(N-1)(N+p+1)(1-R^2)}{(N-p-1)N}$	Nicholson (1960) Lord (1950)
$R_c^2 = 1 - \frac{(N-1)(N-2)(N+1)(1-R^2)}{(N-p-1)(N-p-2)N}$	Stein (1960) Darlington (1968)
$R_c^2 = 1 - \frac{(N+p)(1-R^2)}{(N-p)}$	Rozeboom (1978)
$R_c^2 = 1 - \frac{(N+p+1)(1-R^2)}{(N-p-1)}$	Uhl & Eisenberg (1970) (who cite Lord, 1950)

Note: R_a^2 represents an estimate of r^2, R_c^2 is an estimate of r_c^2.
$p' = p + 1$ with an intercept, $p' = p$ if the intercept = 0.

The most common estimate of shrinkage reported in the literature (and in statistical packages) is an adjusted R^2 that is attributed most frequently to Wherry (1931). However, when researchers are interested in developing a regression model to predict for future subjects, they should report both R_a^2 (for descriptive purposes) and R_c^2, which indicates how well their sample equation may predict in subsequent samples (Cattin, 1980b; Huberty & Mourad, 1980). Indeed, Uhl and Eisenberg (1970) found that a cross-validity estimate (which they attribute to Lord, 1950) was consistently more accurate than Wherry's shrinkage formula in this regard. Some of the more familiar cross-validity formulas are those by Stein (1960), Darlington (1968), Lord (1950), Nicholson (1960), and Browne (1975).

Multiple Regression Sample Size Methods

There are three primary types of sample size methods available for multiple linear regression: cross-validation approaches, rules-of-thumb, and statistical power approaches. The following sections describe each briefly, with emphasis on the aspects of each that pertain to the precision power method described later.

Cross-Validation Approach to Sample Sizes

Park and Dudycha (1974) took a cross-validation approach to calculating sample sizes. They noted that such a cross-validation approach is applicable to both the random and the fixed models of regression; however, because the fixed model poses no practical problems, they emphasized the random model. In the random model, both the predictors and the criterion are sampled together from a joint multivariate distribution. The fixed model, on the other hand,

assumes that the researcher is able to select or control the values of the independent variables before measuring subjects on the random dependent variable. The random model is usually more appropriate to social scientists, because they typically measure subjects on predictors and the criterion simultaneously and therefore are not able to fix the values for the independent variables (Brogden, 1972; Cattin, 1980b; Claudy, 1972; Drasgow, Dorans, & Tucker, 1979; Herzberg, 1969; Park & Dudycha, 1974; Stevens, 1986). It is important to recognize that the misapplication of fixed model data to the random model may cause biased estimates of the population parameters (Claudy, 1972). For a more complete discussion of the random and fixed models, the reader is referred to Afifi and Clark (1990), Brogden (1972), Dunn and Clark (1974), Johnson and Leone (1977), and Sampson (1974).

Park and Dudycha (1974) derived the following sample size formula:

$$N \geq \frac{(1 - \rho^2)\,\delta_1^{\,2}}{\rho^2} + p + 2,$$

where ρ is the anticipated population correlation, and $\delta_1^{\,2}$ is the noncentrality parameter for the t-distribution. Researchers determine the probability with which they want to approximate ρ within some chosen error tolerance. The formula for this probability is:

$$P(\rho - \rho_c \leq \varepsilon) = \gamma$$

The researcher chooses (a) an assumed ρ^2 as the effect size, (b) the absolute error willing to be tolerated, ε, and (c) the probability of being within that error bound, γ. The tables provided by Park and Dudycha (most of which were reprinted in Stevens, 1986, 1992a) then can be consulted with these values. Unfortunately, their tables are limited to only a few possible combinations of sample size, squared correlation, and epsilon. Also unfortunately, their math is too complex for most researchers to derive the information they would need for the cases not tabulated. Additionally, there is no clear rationale for how to determine the best choice of either ε or the probability to use when consulting the tables (although Stevens, 1992a, implied through examples that .05 and .90, respectively, are acceptable values).

Rules-of-Thumb for Selecting Sample Sizes

The most extensive literature regarding sample sizes in regression analysis is in the area of experiential rules. Many scholars have suggested rules-of-thumb for choosing sample sizes that they claim will provide reliable estimates of the population regression coefficients. That is, with a large enough ratio of subjects to predictors, the estimated regression coefficients will be reliable and will closely reflect the true population parameters since shrinkage will be slight (Miller & Kunce, 1973; Pedhazur & Schmelkin, 1991; Tabachnick & Fidell, 1989). This is true because as the number of subjects increases relative to the number of predictors, both R^2 and $\rho_c^{\,2}$ converge toward ρ^2, and therefore the amount of shrinkage decreases (Cattin, 1980a).

Table 2

Rules-of-Thumb for Sample Size Selection

Rule	Author(s)
$N \geq 10p$	Miller & Kunce, 1973, p. 162 Halinski & Feldt, 1970, p. 157 Neter, Wasserman, & Kutner, 1990, p. 467
$N \geq 15p$	Stevens, 1992, p. 125
$N \geq 20p$	Tabachnick & Fidell, 1989, p. 128 Halinski & Feldt, 1970, p. 157 (for identifying predictors)
$N \geq 30p$	Pedhazur & Schmelkin, 1990, p. 447
$N \geq 40p$	Nunnally, 1978 (inferred from examples) Tabachnick & Fidell, 1989, p. 129 (for stepwise regression)
$N \geq 50 + p$	Harris, 1985, p. 64
$N \geq 10p + 50$	Thorndike, 1978, p. 184
$N > 100$ (or 200)	Kerlinger & Pedhazur, 1973, p. 442
$N \geq \frac{(2K^2-1) + K^2p}{(K^2-1)}$	Sawyer, 1982, p. 95 (K is an inflation factor due to estimating coefficients)

Note: In the formulas for sample size above, N represents the suggested sample size and p represents the number of predictors (independent variables) used in the regression analysis.

Rules-of-thumb typically take the form of a subject-to-predictor (N/p) ratio. Table 2 shows that statisticians have recommended using as small a ratio as 10 subjects to each predictor and as large a ratio as 40:1. For example, Stevens (1986) recommended a 15:1 subject-to-variable ratio, which he based primarily on an analysis of Park and Dudycha's (1974) tables. Harris (1985) noted, however, that ratio rules-of-thumb clearly break down for small numbers of predictors. Some scholars have suggested that a minimum of 100, or even 200, subjects is necessary regardless of the number of predictors (e.g., Kerlinger & Pedhazur, 1973). Indeed, Green (1991) found that a combination formula such as $N > 50 + 8p$ was much better than subject-to-variable ratios alone. Additionally, Sawyer (1982) developed a formula based on limiting the inflation of mean squared error. Sawyer's formula, however, easily simplifies into a combination rule once the inflation factor, k, is chosen. Finally, perhaps the most widely used rule-of-thumb was described by Olejnik (1984): "use as many subjects as you can get and you can afford" (p. 40).

The most profound problem with many rules-of-thumb advanced by regression scholars is that they lack any mea-

sure of effect size. Indeed, even Sawyer's inflation factor is not an effect size. It is generally recognized that an estimated effect size must precede the determination of appropriate sample size. Effect size enables a researcher to determine in advance not only what will be necessary for statistical significance, but also what is required for practical significance (Hinkle & Oliver, 1983). The next section includes a more complete discussion of effect size and its importance in power analysis.

Statistical Power Approach to Sample Size

"The power of a statistical test is the probability that it will yield statistically significant results" (Cohen, 1988, p. 1). That is, statistical power is the probability of rejecting the null hypothesis when the null hypothesis is indeed false. Several scholars have proposed regression sample size methods based on statistical power (e.g., Cohen, 1988; Cohen & Cohen, 1983; Gatsonis & Sampson, 1989; Kraemer & Thiemann, 1987; Milton, 1986; Neter, Wasserman, & Kutner, 1990).

Statistical power analysis requires the consideration of at least four parameters: level of significance, power, effect size, and sample size. These four parameters are related such that when any three are fixed, the fourth is mathematically determined (Cohen, 1992). Therefore, it becomes obvious that it is necessary to consider power, alpha, and effect size when attempting to determine a proper sample size. This is a fixed model approach to regression, however, and is most useful when researchers use regression as a means to explain the variance of a phenomenon in lieu of analysis of variance or to determine the importance of individual predictors. It is useful, though, to discuss effect size regardless of the approach to regression that is taken.

In any statistical analysis, there are three strategies for choosing an appropriate effect size: (a) Use effect sizes found in previous studies, (b) Decide on some minimum effect that will be practically significant, or (c) Use conventional small, medium, and large effects (Cohen & Cohen, 1983). Cohen (1988) defined effect size in fixed model multiple regression as a function of the squared multiple correlation, specifically

$$f^2 = \frac{R^2}{1 - R^2}.$$

Since R^2 can be used in the formulas directly, Cohen also defined effect sizes in terms of R^2 such that small effect $R^2 = .02$, medium effect $R^2 = .13$, and large effect $R^2 = .26$. Cohen's (1988) sample size is calculated as

$$N = \frac{\lambda (1 - R^2)}{R^2},$$

where λ is the noncentrality parameter required for the noncentral F-distribution. Cohen's (1988) tables provide the λ needed for the sample size formula.

For prediction studies, the fundamental problem with Cohen's (1988) method, and Green's (1991) formula based on Cohen's method, is that it is designed for use from a fixed model, statistical power approach. And although Gatsonis and Sampson (1989) use the random model approach, their method is also based on a statistical power approach to sample size determination. Unfortunately, statistical power to reject a null hypothesis of zero multiple correlation does not inform us how well a model may predict in other samples. That is, adequate sample sizes for statistical power tell us nothing about the number of subjects needed to obtain stable, meaningful regression weights (Cascio, Valenzi, & Silbey, 1978). Therefore, selecting a sample size based on statistical power tests may be useful in selecting predictors to include in a final model, but it will not ensure adequate sample size to allow a regression equation to generalize to other samples from the given population.

Precision Power

While several scholars have used the term *predictive power* (e.g., Cascio et al., 1978; Kennedy, 1988; Nunnally, 1978; Stevens, 1986, 1992a), only Cattin (1980a) has provided a formal definition. Cattin (1980a) noted that the two common measures of predictive power are the mean squared error of prediction and the cross-validated multiple correlation. However, Cattin was discussing predictive power in regard to the comparison and selection of competing regression models. Stevens (1992a), who discussed predictive power as an aspect of model validation, used the term to mean how well a derived regression equation will predict in other samples from the same population. Therefore, a "loss in predictive power" to Stevens is simply the size of the decrease in the sample R^2 when an appropriate shrinkage or cross-validity formula is applied.

Although both Cattin's and Steven's definitions of predictive power could be applied to the problem of sample size in some fashion, neither would provide any sense of the magnitude of error as compared to the original R^2 value. For example, a loss in predictive power (as Stevens defines it) of .20 suggests drastically different results if the sample R^2 is .50 than if the sample R^2 is .25. Because they desire a regression model that predicts well in subsequent samples, researchers hope to limit shrinkage as much as possible relative to the sample R^2 value they attained. Therefore, a concept is required that provides more information about the magnitude of shrinkage relative to sample values.

The term *precision power* is proposed to indicate how well a regression function is expected to perform if applied to future samples. The term is adapted from Darlington (1990), who used the phrase "precision of estimates" to oppose the "power of hypothesis tests" (i.e., statistical power) while introducing a chapter on choosing sample sizes (p. 379). Precision power is defined more precisely as R_c^2/R^2, which can be inferred and adapted from an example used by Stevens (1992a, p. 100). With a larger sample, this fraction

would be larger because less shrinkage occurs with larger samples, all else remaining constant. Using Stevens' example, a 61.8% shrinkage from $R^2 = .50$ to $R_c^2 = .191$ occurs with a sample size of 50; when the sample is increased to 150, there is only a 15.8% shrinkage from $R^2 = .50$ to $R_c^2 = .421$. The precision power in the first case would be .191/.50 = .382, and precision power in the second case is .421/.50 = .842.

The formulaic definition of precision power,

$$PP = \frac{R_c^2}{R^2} , \qquad (1)$$

can be manipulated algebraically into the formula

$$PP = 1 - \frac{(R^2 - R_c^2)}{R^2} . \qquad (2)$$

The fraction, $(R^2 - R_c^2)/R^2$, can be interpreted as the proportional decrease, or proportional shrinkage (PS), in the squared multiple correlation after an appropriate cross-validity estimate is made. Therefore, 1 - PS provides an estimate of the precision power, and therefore generalizability, of the regression equation. For example, if sample $R^2 = .50$ and $R_c^2 = .10$, the precision power for that regression model would be 1 - (.40/.5) = .20; this suggests very little generalizability for the regression model because the R^2 value shrank by 80%. A precision power value of .90, on the other hand, would indicate a highly generalizable model.

Precision power thus describes how well a regression equation will predict in other samples relative to its ability to predict in the derivation sample. Because the term power has special meaning in the research literature, a word of warning may be prudent at this time. Precision power as defined here, 1 - PS, is similar in form to the theoretical definition of statistical power, 1 - ß, where ß is the probability of a Type II error. However, PS is not the probability of error but the tolerance level for error, or more precisely, cross-validity shrinkage. Furthermore, the term statistical power is used in reference to a test of a hypothesis; the term precision power, on the other hand, applies not to a statistical test, but to an evaluation of the generalizability of a regression equation.

Table 3

Sample Sizes Suggested by Several Methods

K	Method	E(R^2) .75	.50	.25	.10
4	Precision Power ($\varepsilon = .2R^2$)	22	55	155	455
	Precision Power ($\varepsilon = .05$)	55	105	155	305
	Park & Dudycha (p = .90)	37	66	93	173
	Sawyer	22	30	55	130
	30:1	120	120	120	120
	50 + 8p	82	82	82	82
	15:1	60	60	60	60
	Cohen	8	16	48	144
	Gatsonis & Sampson	14	25	55	165
8	Precision Power ($\varepsilon = .2R^2$)	39	99	279	819
	Precision Power ($\varepsilon = .05$)	99	189	279	549
	Park & Dudycha (p = .90)	68	124	171	311
	Sawyer	38	53	98	233
	30:1	240	240	240	240
	50 + 8p	114	114	114	114
	15:1	120	120	120	120
	Cohen	12	20	61	183
	Gatsonis & Sampson	19	32	69	205

Note: K represents the number of predictors in the model

The methods described earlier in the paper (a) provide contradictory sample size recommendations (see Table 3), (b) either oversimplify the issue or are too mathematically complex for many researchers to use, and (c) are not all based on the random model. Indeed, a Monte Carlo study that examined several of the methods from a precision power perspective found that none of the methods provided consistently accurate power rates (Brooks & Barcikowski, 1994). Therefore, the precision power method was developed and verified (Brooks & Barcikowski, 1995). The precision power method was determined to be both consistent and accurate across all levels of expected R^2, numbers of predictors, and actual ρ^2.

Precision Power Method

The theory underlying the precision power sample size method is that the researcher, knowing shrinkage is likely to occur, can set a limit as to the amount of shrinkage that will result. Algebraic manipulation and simplification of a cross-validity formula provides the tool needed to limit this expected shrinkage (Brooks & Barcikowski, 1995). Restructuring the cross-validity formula to solve for sample size yields:

$$N \geq \frac{(p + 1)(2 - 2R^2 + \varepsilon)}{\varepsilon} \qquad (3)$$

where p is the number of predictors, R^2 is the expected sample value (i.e., an effect size), and ε is an acceptable amount of shrinkage, $\varepsilon = R^2 - R_c^2$. This value of ε allows researchers to decide how closely to estimate ρ_c^2 from expected R^2: either as an absolute amount of acceptable shrinkage (e.g., $\varepsilon = .05$) or a proportional decrease (e.g., $\varepsilon = .2R^2$, which represents shrinkage of 20%). This is similar to the method employed by Park and Dudycha (1974).

Through changes in the shrinkage tolerance, ε, the precision power formula has the capacity for simplification. For example, if the researcher does not want the sample R^2 to decrease by more than .05 no matter what the expected value of R^2, formula (3) simplifies to

$$N \geq 20 (p + 1)(2.05 - 2R^2) ;$$

or if the researcher does not want sample R^2 to decrease by more than .03, then

$$N \geq 33\,(p + 1)\,(2.03 - 2R^2)\ .$$

For example, if there are four predictors in the model and expected $R^2 = .50$, N should be chosen greater than $33*5*(2.03 - 2*.50) = 170$. If a researcher wants an estimate of ρ_c^2 not less than 80% of the sample R^2 value, formula (3) can be reformulated using $\varepsilon = R^2 - .8R^2 = .2R^2$, such that

$$N \geq \frac{(p + 1)\,(2 - 1.8\,R^2)}{.2\,R^2}\ ;$$

or if the researcher wants a ρ_c^2 estimate not less than 75% of the sample R^2 value, the formula can be reformulated such that $\varepsilon = .25R^2$:

$$N \geq \frac{(p + 1)\,(2 - 1.75\,R^2)}{.25\,R^2}\ .$$

As an example, with five predictors and an anticipated R^2 of .40, at least 78 subjects should be used to attain expected precision power of .75.

Other values for ε can be chosen by substituting ε for the quantity $(R^2 - R_c^2)$ in formula (2). Formula (2) can be rewritten as

$$PP = 1 - \frac{\varepsilon}{R^2} \qquad (4)$$

and therefore

$$\varepsilon = R^2 - (PP * R^2)\ . \qquad (5)$$

For example then, if researchers wanted the R_c^2 after shrinkage to be no less than 87% (i.e., a decrease in R^2 of no more than 13%) of the expected sample R^2 of .53 with four predictors, they would set PP = .87, and calculate $\varepsilon = .069$ to use in sample size formula (3). Plugging the values into formula (3) provides a sample size of

$$N \geq \frac{5\,(2 - 2\,(.53) + .069)}{.069} = 73$$

Thus, 73 subjects should provide a large enough sample so that expected $R_c^2 > .46$, which is 87% of the assumed $\rho^2 = .53$.

Conclusions

The seriousness of concern about sample sizes and precision power in regression is not obvious--after all, researchers have shrinkage and cross-validity formulas available to "correct" for inadequate sample sizes. However, a prediction model produced using a larger sample size will better estimate both ρ^2 (using R_a^2) and ρ_c^2 (using R_c^2); more importantly, it will provide more stable regression weights. Therefore, such a model will predict better in future samples because the efficiency of a prediction model depends not on the estimates of ρ^2 and ρ_c^2, but on the stability of the regression coefficients.

The primary goal of precision power analysis is to reduce the upward bias of R^2, thereby better estimating both ρ^2 and ρ_c^2, so that results are not sample specific. The precision power method provides researchers with a means to determine the optimum sample size for prediction studies. Assuming the researcher can make a reasonable estimate of the population ρ^2, the precision power method provides the most consistent precision power rates of all existing methods. It should be noted that Brooks and Barcikowski's (1995) results apply only to standard regression analysis, where all predictors are entered into the model simultaneously. Many researchers agree, however, that even larger samples are required when preselection or best subset regression analyses are used (Halinski & Feldt, 1970; Nunnally, 1978; Tabachnick & Fidell, 1989).

Unfortunately, no sample size method can eliminate all problems. When researchers choose an expected R^2 that overestimates ρ^2 (either explicitly by choice of an inflated effect size or implicitly by use of an inappropriate rule-of-thumb), power rates are unacceptably low. Similarly, when researchers choose an expected R^2 which is much lower than the population ρ^2, power rates are unnecessarily high (more subjects than necessary are recommended). Therefore, if the researcher cannot make a reasonable estimate of ρ^2, no sample size method will work well. In other words, effect size is just as critical when choosing sample sizes in multiple regression as it is with other statistical methods, because all methods are inadequate when expected R^2 deviates too far from ρ^2.

Researchers who hope to develop an efficient prediction model using multiple regression must be concerned with the size of their derivation samples, starting with an appropriate effect size, probably in the form of an expected R^2. It may be worth noting that although Stevens (1992a) suggested an effect size of $\rho^2 = .50$ as a reasonable guess for the social sciences when a better estimate is unavailable, Rozeboom (1981) believes that $\rho^2 = .50$ may be an upper bound and Cohen (1988) offers $\rho^2 = .26$ as a large effect size. Of course, the best choice of effect size is based on evidence from the research literature or from past research experience. Clearly, effect size impacts the selection of sample size in complex ways. Such discrepancies make it more obvious why some scholars have recommended sample sizes of 100, 200, and even 500, no matter how many predictors, and others have suggested subject-to-variable ratios as large as 40:1 (e.g., Kerlinger & Pedhazur, 1973; Nunnally, 1978; Pedhazur, 1982; Tabachnick & Fidell, 1989).

Another concern that researchers must consider is the question of a priori precision power rate. It is useful to remember that "for both statistical and practical reasons, then, one wants to measure the smallest number of cases that has a decent chance of revealing a significant relationship if,

indeed, one is there" (Tabachnick & Fidell, 1989, p. 129). Given the current state of the research, there are no clear guidelines as to what precision power rate to choose. Similar to choices regarding statistical power and Type I error rates, the importance of generalizability to a study must be considered by researchers. For example, if it is critical that the expected R^2 value not shrink much, the researcher may wish to choose a very high precision power rate.

Summary

Sample sizes for multiple linear regression, particularly when used to develop prediction models, must be chosen so as to provide adequate power both for statistical significance and also for generalizability of the model. It is well-documented and unfortunate that many researchers do not heed this guideline, probably often choosing instead to abide by the rule cited by Olejnik (1984): use as many subjects as you can get. Possibly more tragic are the cases where researchers have used a groundless rule-of-thumb to choose their sample sizes or have neglected to report an appropriate "shrunken" R^2; these studies probably provide inaccurate conclusions regarding the topics under investigation.

For whatever reasons, empirical study into power for multiple regression has been lacking. Rules-of-thumb have existed for decades with little empirical or mathematical support. Indeed, both studies by Brooks and Barcikowski (1994, 1995) have found very limited value for rules-of-thumb in regression. Additionally, sample size methods offered by Park and Dudycha (1974), Cohen (1988), Gatsonis and Sampson (1989), and Sawyer (1982) were each found lacking in some way. The only method which provided consistently accurate power for generalizability was the precision power method.

It is hoped that the information presented within this paper encourages researchers to consider more seriously the issues of power and sample size for multiple linear regression studies. Because power in prediction studies has more meaning than for other statistical designs, it is an even more important consideration. Researchers must recognize the potential danger of choosing an inappropriate effect size (either implicitly or explicitly) or ignoring effect size entirely. Further, no statistical analysis or correction (such as an adjusted R^2) can repair damage caused by an inadequate sample. Researchers must remember that a sample must not only be large enough, but that it must also be random and appropriately representative of the population to which the research will generalize (Cooley & Lohnes, 1971; Miller & Kunce, 1973).

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971

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975

Regression Analyses for ABAB Designs in Educational Research

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Abstract

Too many practitioners interpret ABAB research based on visual inspection rather than statistical analyses. This article illustrates the techniques and importance of regression analyses on a hypothetical single-case study group given Cooperative Learning as an instructional strategy for increasing cooperative behavior.

The ABAB design has become one of the most commonly used designs in single-case research because it is believed to control for the confounding effects of history and maturation (Barlow & Hersen, 1984). Hence, the researcher can be reasonably sure that the results cannot be attributed to extraneous factors or confounding variables. Unfortunately, most practitioners of single-case methodologies take little precaution against the potential of their results being attributed to chance. That is, they overwhelmingly interpret their results based on visual inspection rather than statistical analysis (Busk & Marascuilo, 1992).

Though practically simple, the validity of visual inspection is questionable (e.g., Park, Marascuilo, & Gaylord-Ross, 1990). Many researchers extol the virtues of visual inspection and graphic analysis of data, asserting that an "important" effect will be manifest in an obvious manner, and that in applied settings only marked effects have practical significance (Baer, 1977). However, it has been suggested that the presentation of both visual and statistical analyses gives more credence to research findings (Huitema, 1985; Park et al., 1990). Yet, no consensus on what constitutes an appropriate analysis has been reached. Variants of the repeated-measures analysis of variance (ANOVA) have been suggested (Shine & Bower, 1971; Gentile, Roden, & Klein, 1972). However, based on simulation results (Toothaker et al., 1983), these tests are not recommended because they seriously inflate the Type I error rate when there is nonzero autocorrelation. Furthermore, an important assumption of linear models, however, is independence of error terms for all observations. Therefore, statistical analysis of single-case data becomes problematic when dependency exists in the data (see Busk & Marascuilo, 1992).

To circumvent the violation of the independence of errors assumption (i.e., autocorrelation), *interrupted time-series analysis* has been recommended for the analysis of single-subject data (Jones, Vaught, & Weinrott, 1977). Although this approach has the advantage of accounting for serial dependency, it raises new difficulties. Namely, the modeling process may become quite complex, to the point that it is difficult to make inferential decisions or even identify the null hypothesis being tested (Gorsuch, 1983). However, many single-case researchers contend that data from behavioral experiments can be analyzed with the simplest of the time-series models and that time-series and least-squares methodologies can be combined (Horne, Yang, & Ware, 1982).

Huitema (1985) contends that little evidence exists to indicate that serial dependency is a major threat to single-case behavioral researchers; however, this contention has met with substantial resistance and rebuttal. Moreover, time-series analyses typically require a minimum of 50 to 60 data points per phase (Jones et al., 1977), yet single-case experiments provide far fewer observations for the entire study. Several nonparametric approaches to time-series data have also been suggested (see Edgington, 1992; Levin, Marascuilo, & Hubert, 1978); however, most of these tests were not developed to assess the effects of treatment on trends. Since the detection and control of dependency or autocorrelation involves an investigation of overall and within-phase trends, discussion will focus on regression-based trend models. For the sake of simplicity and to make these suggestions concrete, an ABAB design will be presented.

Hypothetical Example of an ABAB Design

Based on an experiment using Cooperative Learning groups as an instructional strategy for integrating autistic students into a fourth-grade social studies class (Dugan et al., 1995), hypothetical data for one student from an ABAB reversal design were created. Suppose data were obtained from a three-week initial baseline period in which students received a 40-minute teacher lecture four times per week. Five-minute time-sampling probes were systematically conducted to assess the cooperative behavior of the subject. The number of seconds engaged in appropriate interaction during the probe was used as the dependent measure of the student's ability to cooperate. During this initial baseline, $n_{a1} = 10$ observations were made. A four-week Cooperative

976

Learning (B) phase, which involved a 10-minute whole class lecture followed by the construction of Cooperative Learning groups of four students, yielded $n_{b1} = 12$ data points for this student. A three-week reversal phase yielded $n_{a2} = 8$ cooperation measures. A five-week reinstatement of Cooperative Learning groups yielded $n_{b2} = 9$ data points. The total time-series of $T = 39$ cooperation measures is displayed in Figure 1. Descriptively, the Cooperative Learning conditions appear to increase cooperation for this student. During the initial baseline, cooperation was at a mean level of 43.40 seconds of interaction (SD = 25.33). After the initial Cooperative Learning intervention, the mean number of seconds engaged in appropriate interaction drastically increased to 212.92 (SD = 77.68). During the reversal phase, cooperation reduced to a mean of 21.88 (SD = 17.51). When Cooperative Learning groups were reinstated, cooperation increased to a mean level of 217.22 (SD = 46.04).

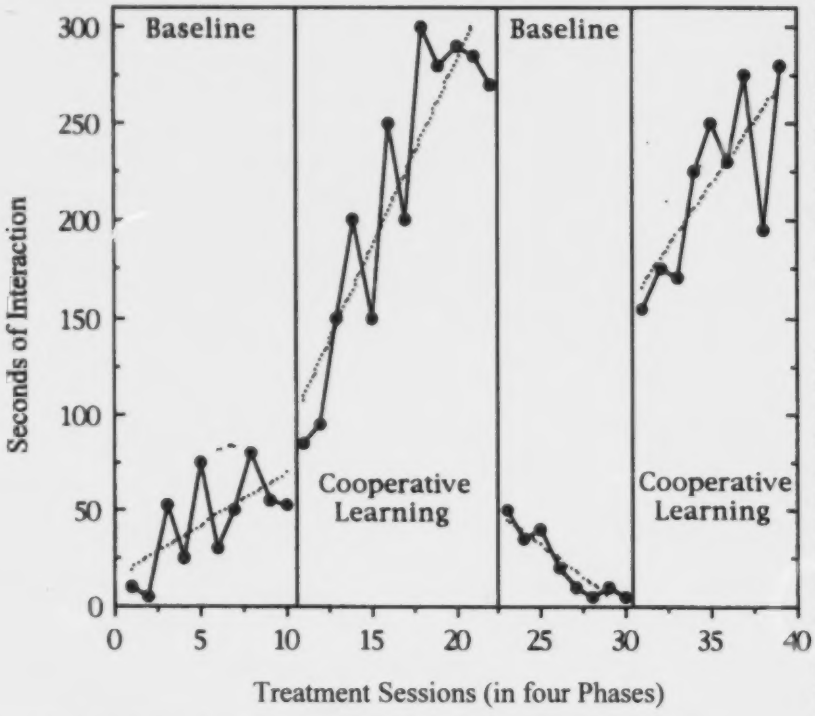

Figure 1. Seconds of Interaction (Cooperation) as a function of Treatment phases. Dotted lines represent the within-phase regressions solved in Equations 2 through 6.

Trend Analysis for Single-Case Data

Similar to changes in level and slope, autocorrelation is frequently difficult to detect through visual inspection alone. In examining the cooperation data in Figure 1, the potential confound of autocorrelation is plausible when we consider the nature of the variables. That is, the reliability of the cooperation may be questionable, which could lead to autocorrelated errors. Furthermore, the effects of cooperative groups could be obscured because during the initial baseline phase, the amount of interaction may be autocorrelated due to the subject's acclimation to the classroom, which is substantiated by the trends in the first Cooperative Learning phase where cooperation measures are trending upwards as phases are changed. This being the case, we cannot be completely confident that the apparent results are a function of the treatment and not merely a function of cycles or errors that are correlated with these variables. However, because of the small number of observations within each phase, one must consider the low power of investigating within-phase autocorrelation. Therefore, autoregressive analyses would not be considered valid and trend models would be preferred.

One cause of autocorrelation in single-case observations is the failure to specify elements in the model which represent all the influences at work. If the statistical model is a regression analysis, these trends can be included as a covariate. The effect of an intervention, however, may result in a change in slope as well as a change in level, or in some cases just a change in slope (Kazdin, 1984).

Kelly, McNeil, and Newman (1973) proposed a comprehensive approach that assesses shifts in level and slope. This approach uses time of observation (t) as a covariate, dummy codes (X_j) to represent the phases, and an interaction term involving the multiplication of t and X_j to estimate the change in slope. However, t and Xj are necessarily correlated in the ABAB design, which often makes the separation of baseline and post-treatment effects difficult. Therefore, the use of a piecewise regression, akin to regression-discontinuity models (Trochim, 1984), has been recommended. Thus, a researcher interested in statistically controlling autocorrelative trends and assessing changes in slope may use some variant of the following Model:

$$Y_t = b_0 + b_1X_{1t} + b_2X_{2t} + b_3X_{3t} + b_4t^* + b_5X_{1t}t^* + b_6X_{2t}t^* + b_7X_{3t}t^* + e_t \quad . \qquad (1)$$

where X_{1t}, X_{2t}, and X_{3t} are dummy codes for each phase following the initial baseline. That is, observations belonging to the initial baseline received zeros on all three dummy codes. Based on the idea of centering, t is rescaled such that $t^* = 1$ at the start of each phase thus reducing the correlation of t^*, Xj, and the interaction (change in slope) term. For the entire time-series, $t^* = t$. For observations in the first treatment phase, $t^* = (t - n_{a1})$, $t^* = (t - n_{a1} - n_{b1})$ for the reversal

phase observations, and $t^* = (t - n_{a1} - n_{b1} - n_{a2})$ for the fourth phase, where n_{a1}, n_{b1}, and n_{a2} are the number of data points in each of the first three phases, respectively. It should be noted that other approaches to rescaling t have been suggested (Gorsuch, 1983; Huitema, McKean, & McKnight, 1994; Kelley et al., 1973); however, all versions lead to the same full-model R^2 and test statistics, only the interpretation of the regression coefficients and tests of specific hypotheses differ. For model (1), the initial baseline level of behavior is estimated by b_0. Also in this model, b_1, b_2, and b_3 estimate the respective changes in level as compared to the initial baseline. The three interaction terms (b_5, b_6, and b_7) estimate changes in slope as compared to the baseline regression (b_4). For those more familiar with other types of analyses, Model (1) gives parameter estimates and test statistics equivalent to an ANCOVA with time (t) as a covariate. It should be noted that in ANCOVA models, a significant time by phase interaction indicates that slopes significantly change (are not parallel) across treatment which is the regression equivalent to rejecting the following null hypothesis, H_0: $b_5 = b_6 = b_7 = 0$. This significant heterogeneity of regression effect may obscure the interpretation of Phase main effects in single-case designs.

Through the regression approach, pairwise tests of regression coefficients are also available. For example in model (1), the test of $b_4 = 0$ assesses whether the initial baseline regression significantly differs from zero. Tests of $b_5 = 0$, $b_6 = 0$, and $b_7 = 0$, assess whether the slopes of the first treatment phase, removal phase, and second treatment phase significantly differ from the initial baseline regression (b_4), respectively. Furthermore, testing $b_5 = b_6$ assesses whether the slope changes between the first treatment and removal phases. Likewise, testing $b_6 = b_7$ assesses whether slope changes between removal phases and the second treatment phase. It should be mentioned that if a researcher is interested in multiple comparisons, corrections for the inflation of Type I errors (i.e., Bonferroni adjustment) is strongly suggested. In this case with four phases, six pairwise comparisons are possible. Thus, the Bonferroni adjusted significance level is a = .05/6 = .0083.

For the cooperation data in Figure 1, the statistical trend Model (1) was employed to control dependency. The Appendix gives the raw data in Figure 1 and the SAS (1993)

Dependent Variable: COOP Analysis of Variance

Source	DF	Sum of Squares	Mean Square	F Value	Prob>F
Model	7	387087.71324	55298.24475	72.657	0.0001
Error	31	23593.72266	761.08783		
C Total	38	410681.43590			

Root MSE	27.58782	R-square	0.9425	Dep Mean	131.25641
C.V.	21.01827	Adj R-sq	0.9296		

Variable	DF	Parameter Estimate	Standard Error	T for H0: Parameter=0	Prob >]T]
INTERCEP	1	13.466667	18.84606907	0.715	0.4802
X1	1	73.881818	25.36661513	2.913	0.0066
X2	1	38.140476	28.58781834	1.334	0.1919
X3	1	139.172222	27.51108071	5.059	0.0001
TSTAR	1	5.442424	3.03731905	1.792	0.0829
X1T	1	13.875758	3.81413155	3.638	0.0010
X2T	1	-12.049567	5.22938292	-2.304	0.0281
X3T	1	7.474242	4.68082302	1.597	0.1205

Dependent Variable: COOP

Test: INTERACT	Numerator:	8549.6306	DF:	3	F value:	11.2334
	Denominator:	761.0878	DF:	31	Prob>F:	0.0001
Test: B5EQB6	Numerator:	21820.3648	DF:	1	F value:	28.6700
	Denominator:	761.0878	DF:	31	Prob>F:	0.0001
Test: B5EQB7	Numerator:	1732.0356	DF:	1	F value:	2.2757
	Denominator:	761.0878	DF:	31	Prob>F:	0.1415
Test: B6EQB7	Numerator:	9417.3669	DF:	1	F value:	12.3736
	Denominator:	761.0878	DF:	31	Prob>F:	0.0014
Test: IMPACTB1	Numerator:	2348.1142	DF:	1	F value:	3.0852
	Denominator:	761.0878	DF:	31	Prob>F:	0.0889
Test: NB1EQ2	Numerator:	5916.7740	DF:	1	F value:	7.7741
	Denominator:	761.0878	DF:	31	Prob>F:	0.0090
Test: NB1EQ3	Numerator:	11648.5775	DF:	1	F value:	15.3052
	Denominator:	761.0878	DF:	31	Prob>F:	0.0005
Test: NB1EQ12	Numerator:	98605.1992	DF:	1	F value:	129.5582
	Denominator:	761.0878	DF:	31	Prob>F:	0.0001
Test: IMPACTA2	Numerator:	74059.4949	DF:	1	F value:	97.3074
	Denominator:	761.0878	DF:	31	Prob>F:	0.0001
Test: NA2EQ8	Numerator:	17396.4649	DF:	1	F value:	22.8574
	Denominator:	761.0878	DF:	31	Prob>F:	0.0001
Test: IMPACTB2	Numerator:	35023.3343	DF:	1	F value:	46.0175
	Denominator:	761.0878	DF:	31	Prob>F:	0.0001
Test: NB2EQ9	Numerator:	91856.6676	DF:	1	F value:	120.6913
	Denominator:	761.0878	DF:	31	Prob>F:	0.0001

Figure 2. Edited SAS Output for Analysis of Data in Figure 1.

commands for performing the following analyses. Figure 2 shows a SAS output for Model (1), which yielded the following regression solution:

$$\hat{Y}_t = 13.467 + 19.458X_{1t} - 81.593X_{2t} - 24.101X_{3t} + 5.442t^* + 13.876X_{1t}t^* - 12.050X_{2t}t^* + 7.474X_{3t}t^* . \quad (2)$$

As can be seen in Figure 2, the first two interaction regression coefficients (X_1 and X_2) were significantly different from zero indicating that the slopes in the first treatment phase and the reversal phase changed from the regression slope of the initial baseline, respectively. Also, ANCOVA model with t as the covariate showed a statistically significant interaction of time and phase (H0: $b_5 = b_6 = b_7 = 0$), $F(3,31) = 11.23$, $p < .0001$, which indicates that the slopes changed significantly across phases.

With this statistical interaction, one might choose to plot each phase separately, for descriptive purposes. Furthermore, in the presence of significant interactions (i.e., changes in slope), however, one should be cautious in interpretation of changes in level. Since, in the dummy coding process baseline observations were given values of zero across X_1, X_2, and X_3, their respective regression coefficients are not weighted. Thus for the baseline data:

$$\hat{Y}_{A1} = 13.467 + 5.442t^* \quad (3)$$

For the data in the first Cooperative Learning phase, only X_1 was assigned values of 1, X_2 and X_3 were assigned 0; thus, the regression equation for the acquisition phase is:

$$\hat{Y}_{B1} = 13.467 + 73.882 + 5.442t^* + 13.876t^*$$

Since, $t^* = (t - n_{a1})$ in the first treatment phase,

$$\hat{Y}_{B1} = 87.348 + 19.318t^* \quad (4)$$

Using this same process, the regression solution for the reversal phase is,

$$\hat{Y}_{A2} = 51.607 - 6.607t^* , \quad (5)$$

and for the last treatment phase,

$$\hat{Y}_{B2} = 152.639 + 12.917t^* ; \quad (6)$$

Other pairwise tests show that the slope in the reversal phase was significantly different than the slopes in the first [$F(1,31) = 28.67$, $p < .0001$] and second treatment phases, $F(1,31) = 12.37$, $p = .0014$. The slopes of the two treatment phases did not significantly differ, $F(1,31) = 2.28$, $p = .1415$. Therefore, it seems that the removal of Cooperative Learning groups changed rate of cooperation to a negative slope. When Cooperative Learning groups were reinstated the rate of cooperation over time again became an increasing function. Thus, cooperative behavior increases more rapidly when the student is part of a Cooperative Learning group.

As in ANCOVA models, when a significant interaction of the independent variable and the covariate is present, the use of some follow-up analysis such as the Johnson-Neyman technique is suggested. In single-case research, this means that one searches for observation points within a phase where the values of the dependent variable are significantly changed as compared to some other phase, while statistically controlling the effects of the within-phase regression. Rogosa (1980) contends that researchers should select points of theoretical interest, which allows for tests of very specific hypotheses. In single-case research, an experimenter may wish to test all observation points in the phase for statistical significance. Thus, Rogosa's (1980) pick-a-point method was used to investigate at what observation point after changing phases did cooperation significantly change. However, this requires many statistical tests. For this example, a Bonferroni adjustment was used so that a = .0017.

To assess the immediate impact of the first Cooperative Learning phase, one must compare the first observation ($t^* = 1$) of the treatment phase (b_1) as compared to the last observation ($t^* = 10$) in the initial baseline phase (see Equations 1 and 2). Thus, a method similar to regression-discontinuity analysis (Trochim, 1984) was employed to test the following null hypothesis:

$$H_0: 10b_4 = b_1 + 1b_4 + 1b_5 . \quad (7)$$

The results showed that the first treatment phase did not immediately increase cooperation over the last observation of the baseline, $F(1, 31) = 3.09$, $p = .0889$. To test whether significant differences occur through any of the n_{b1} points in the first treatment phase, null hypotheses of the following general form can be used:

$$H_0: n_{a1}b_4 = b_1 + n_{b1}b_4 + n_{b1}b_5 \quad (8)$$

Given that $n_{a1} = 10$, testing (8) from $n_{b1} = 2$ to 12, showed that the amount of time engaged in social interaction did not significantly increase by the second observation in the treatment phase, $F(1, 31) = 7.77$, $p = .0090$. However, cooperation was significantly increased over the last baseline observation by the third treatment observation, $F(1, 31) = 15.31$, $p = .0005$ (see Figure 2 for results). This increased level of cooperation continued through the rest of the first treatment phase ($ps < .0001$). This indicates that the implementation of Cooperative Learning groups, which has strong effects on the rate of cooperative behavior, had a gradual, but permanent effect on the level of cooperation.

To assess whether a statistically significant reduction in cooperation occurred at any point (n_{a2}) during the removal phase as compared to the last observation of the first treatment phase ($n_{b1} = 12$), null hypotheses of the following general form can be tested:

$$H_0: b_1 + n_{b1}b_4 + n_{b1}b_5 = b_2 + n_{a2}b_4 + n_{a2}b_6 . \quad (9)$$

Statistical tests for $n_{a2} = 1$ to 9 showed that the removal of Cooperative Learning groups immediately lowered cooperative behavior as compared to the last observation in the second baseline, $F(1, 31) = 97.31$, $p < .0001$. This re-

duction in cooperation remained statistically significant throughout the reversal phase (see Figure 2).

To assess whether a statistically significant increase in cooperation occurred during the last treatment phase as compared to the last observation of the removal phase (n_{a2} = 8), null hypotheses similar to (9), with n_{a2} substituted for n_{b1} and n_{b2} substituted for n_{a2}, were formed. The results indicate that the re-instatement of Cooperative Learning groups immediately increased cooperative behavior over the last observation in the second baseline, $F(1, 31) = 46.02$, $p < .0001$ (see Figure 2). This significant increase in the number of seconds engaged in social interaction remained through last treatment phase ($ps < .0001$). The reader is referred to Rindskopf (1984) and Rogosa (1980) for more details on testing specific linear hypotheses of this form. Jennings (1988) provides a very usable guide to ANCOVA follow-up procedures and test of linear hypothesis.

In summary, despite the claims that single-case data are not amenable to regression-based methods, the models presented provide a flexible approach to the statistical analysis of single-case data. Furthermore, regression-based models provide a way of statistically controlling the confounding effects of autocorrelation. It should also be noted that if nonlinear processes are suspected within phases they can also be modeled statistically (Kelly et al., 1973; Trochim, 1984). In the presence of autocorrelative or nonlinear processes, as with other analytic models, it would be important to obtain a sufficient number of baseline observation so that the within-phase trends could be modeled. In situations where the baseline series were not of adequate length, nonparametric tests of single case intervention effects may be employed (e.g., Edgington, 1992; Levin et al., 1978). Many studies have shown the benefits of nonparametric and randomization tests, however, least-squares regression approaches to analyzing single case designs have fared well in simulation studies (Huitema et al., 1994). Moreover, regression models can be generalized to many single case designs including multiple baseline, and alternating treatment designs (see Kelly et al., 1973). One caveat that must be addressed, however, is that the assumptions of linear regression apply. Therefore, regression diagnostics such as inspection of residuals and tests/corrections for heteroscedasticity are important. Future simulation studies should focus on comparing the statistical properties of least-squares regression methods to nonparametric and randomization tests under situations that occur most frequently in single-case research.

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APPENDIX

SAS Commands for Analyzing Data in Figure 1.

```
data one;options ls=73;
input coop @@;
na1=10;nb1=12;na2=8;nb2=9;
t=_n_;
if t <= na1 then phase=1;
if t > na1 & t <= (na1+nb1) then phase=2;
if t > (na1+nb1) & t <= (na1+nb1+na2) then phase=3;
if t > (na1+nb1+na2) then phase=4;
x1=0;x2=0;x3=0;
if phase=2 then x1=1;
if phase=3 then x2=1;
if phase=4 then x3=1;
tstar=t;
if phase=2 then tstar=t-na1;
if phase=3 then tstar=t-na1-nb1;
if phase=4 then tstar=t-na1-nb1-na2;
x1t=x1*tstar;x2t=x2*tstar;x3t=x3*tstar;
cards;
 10   5  52  25  75  30  50  80  55  52
 85  95 150 200 150 250 200 300 280 290 285 270
 50  35  40  20  10   5  10   5
155 175 170 225 250 230 275 195 280
proc reg;model coop= x1 x2 x3 tstar x1t x2t x3t;
 interact: test x1t=0,x2t=0,x3t=0;** Test of interaction, Ho: b5=b6=b7=0  ;
  b5EQb6: test x1t=x2t;** Pairwise test of b5 = b6 ;
  b5EQb7: test x1t=x3t;** Pairwise test of b5 = b7 ;
  b6EQb7: test x2t=x3t;** Pairwise test of b6 = b7 ;
**  Introduction of Treatment(Phase 2) Compared to Initial Baseline(Phase 1) ;
 impactb1: test 10*tstar = 1*tstar + x1 + 1*x1t;*Test of Eq. 7, 10b4=b1+b4+b5;
   nb1eq2: test 10*tstar = 2*tstar + x1 + 2*x1t;*Test of Eq. 8, na1=10 nb1=2;
   nb1eq3: test 10*tstar = 3*tstar + x1 + 3*x1t;*Test of Eq. 8, na1=10 nb1=3;
.
.
.
  nb1eq12: test 10*tstar =12*tstar + x1 +12*x1t;
    ** Test of Eq. 8, na1=10 nb1=12;
***    Reversal Effects (Phase 3) Compared to Treatment (Phase 2)    ***;
 impacta2: test 12*tstar + x1 + 12*x1t = 1*tstar + x2 + 1*x1t;
       ** Test of Eq. 9, nb1=12 na2=1;
.
.
.
   na2eq8: test 12*tstar + x1 + 12*x1t = 8*tstar + x2 + 8*x1t;
        ** Test of Eq. 9, nb1=12 na2=8;
***   Effect of Treatment (Phase 4) Compared to Reversal )Phase 3)      ***;
  impactb2: test  8*tstar + x2 + 8*x2t = 1*tstar + x3 + 1*x3t;**Test of Eq. 9,
       na2 substituted for nb1, nb2 substituted for na2, na2=8 nb2=1;
.
.
.
    nb2eq9: test  8*tstar + x2 + 8*x2t = 9*tstar + x3 + 9*x3t;**Test of Eq. 9,
              na2 substituted for nb1, nb2 substituted for na2,  na2=8 nb2=9;

proc glm;class phase;
  model coop= phase tstar phase*tstar/solution;
```

981

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The Use of Multiple Regression Models to Determine if Conjoint Analysis Should Be Conducted on Aggregate Data

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Abstract

Conjoint analysis is a statistical procedure often used by marketing researchers to measure the relative importance of various characteristics of a product or service as perceived by consumers. During the past ten years, conjoint analysis has been used to estimate consumers' preferences for many different types of products and services including educational services. In a conjoint analysis study, a researcher must determine whether the product factor estimates, which are used to measure consumer preferences, should be calculated and interpreted for each respondent or the respondents collectively. The purpose of this article is to demonstrate how a researcher can use multiple regression models to determine whether it is appropriate to analyze and interpret the aggregate data by examining the factor-respondents interaction effects. A hypothetical example is used to clarify how this technique can be used.

It is a common task for marketing researchers to attempt to measure the relative importance of various attributes of a product or a service as viewed by its consumers. In the mid-1970s, marketing researchers began to use conjoint analysis as a tool to measure the relative importance of a product's attributes as perceived by its current and prospective buyers. As noted by Hair, Anderson, Tatham, and Black (1995), "conjoint analysis is best suited for understanding consumers' reactions to and evaluations of predetermined attribute combinations that represent potential products or services" (p. 557).

Wittink and Cattin (1989) documented the widespread use of conjoint analysis by various companies and institutions. It should be noted, however, that conjoint studies have not been restricted to just the business arena. Such studies have been conducted for educational institutions as well (Fraas & Paugh, 1990). With the increased pressure on educational institutions to market their services, this type of information may provide valuable information on how to market or possibly change an institution's educational service to match the preferences of its potential and current students.

One issue that a researcher who utilizes conjoint analysis will face is whether it is appropriate to analyze the respondents' data collectively. That is, the researcher has the choice of fitting the model to the aggregate of the consumers' responses or fitting a model to each of the respondent's data separately. As noted by Hair et al. (1995), "unless the researcher is definitely dealing with a population exhibiting homogeneous behavior with respect to the factors, aggregate analysis should not be used" (p. 579).

Thus, a researcher who has collected data in a conjoint study must decide whether the population exhibits homogenous behavior with respect to the factors. The purpose of this article is to demonstrate how a researcher can use multiple regression models to determine if, in fact, the population exhibits such responses.

Conjoint Analysis

As previously stated, conjoint analysis is an analytical procedure used to measure the relative importance of various characteristics of a product or service as perceived by consumers. The reader is encouraged to refer to Hair et al. (1995) for an excellent discussion of the steps that a researcher should follow when conducting a conjoint study. Only a brief discussion of the essential components of a conjoint analysis study is presented here.

When conducting conjoint analysis, the researcher must first identify the key decision criteria, that is, the factors that are involved in the choice process. Once these factors are identified, the researcher must determine the number of characteristics, which is referred to as the number of levels, that each factor will contain. Based on the number of factors and their number of levels, the researcher creates the various hypothetical products. These hypothetical products or services will consist of different combinations of factor characteristics.

The number of factors and factor levels dictate the number of hypothetical products that the respondents must evaluate. When the number of different products or services is not prohibitively large, a full-factorial design could be

982

used. Often, however, a conjoint study will include a significantly large number of factors and/or factor levels. In such a case, the total number of possible hypothetical products would far exceed a respondent's endurance to evaluate each one. To illustrate, if a study involved four factors with four levels each, a full-factorial design would require the respondent to evaluate 256 or (4 x 4 x 4 x 4) different services. In studies such as this, the researcher often assumes that a model that contains only the main effects will be an adequate model and then uses a fractional-factorial design. The use of such a design would reduce the required number of hypothetical products from 256 to 16.

Once the hypothetical products are designed, the researcher has the respondents evaluate them by rating each one on a given point scale, such as a 1-to-10 scale. The researcher uses a conjoint analysis computer program to estimate the preference or utility associated with each value of each factor. Two such computer programs are produced by Bretton-Clark (1988a, 1988b, & 1988c) and SPSS (1990). These preference estimates are often referred to as part-worth values. The part-worth values, which can be estimated through a regression procedure, are used to judge the importance and type of influence that the factor has on the consumers' preferences.

As previously mentioned, a key question that the researcher must address before the part-worth values are estimated is: Should the part-worth values be estimated and interpreted for each respondent or for the respondents collectively? The following section discusses, with the aid of a simplified hypothetical example, a technique that a researcher could use to judge whether the population is sufficiently homogeneous with respect to the influence of each factor on the respondents' ratings to analyze their data collectively.

The Importance of the Factor-Respondents Interaction Effects

If it is appropriate to conduct a conjoint analysis on the ratings of the respondents as a group, the researcher must assume that the factors do not interact with the respondents. That is, the relative contributions of the factors remain constant across the respondents. If this is not the case, an aggregate analysis of the ratings of the hypothetical products could be misleading. In such a case, segmentation of the respondents would be informative.

To determine if indeed factor-respondents interaction effects are present, a researcher can use multiple regression models that utilize person variables. Person variables, which are discussed by Pedhazur (1977), Williams (1977) and McNeil, Newman, & Kelly (in press), contain zero and one values. For a given person variable, a zero indicates that the corresponding criterion value was not obtained from the person represented by this person variable. And a value of one indicates that the corresponding criterion value was given by this person.

Fraas and Newman (1989) have demonstrated that a multiple regression model that contains person variables can be used to generate part-worth values that are identical to the values estimated by traditional conjoint analysis computer programs. Thus, the use of person variables will not change the part-worth estimates. To determine whether the factor-respondents interaction effects are present, the person vectors must be used along with the factor variables to generate variables that, when used in conjunction with regression models, will estimate the amount of variation in the criterion variable that is associated with those interaction effects. How such variables are generated and incorporated into the appropriate regression models can best be explained through the use of a simple hypothetical conjoint study.

Hypothetical Conjoint Study

Assume that a researcher has decided to use conjoint analysis to estimate the part-worth values for two factors that relate to the students' preferences for certain offerings in a continuing education program. The first factor, which consists of two levels, deals with the number of sessions that the class would meet per week. Since this factor contains two levels, the variable that represents this factor would contain zero and one values. A value of zero represents a class that would meet one day a week for four hours. The other level, which is represented by a value of one, indicates that the class would meet two days a week for two hours each day.

The second factor, which also consists of two levels, deals with the location of the class. A value of zero for this location variable indicates that the class would be held in Ashland, Ohio. A value of one indicates that the class would meet in Medina, Ohio. The four hypothetical continuing education classes, which will be evaluated by the prospective students, are listed in Table 1.

Table 1.

Hypothetical Continuing Education Classes

Hypothetical Courses	Number of Class Meetings Per Week	Class Location
Course 1	Two	Medina
Course 2	Two	Ashland
Course 3	One	Medina
Course 4	One	Ashland

In this example, we are assuming that three prospective students are asked to rate the four hypothetical classes using a 10-point scale. It should be noted that for such a study, the number of prospective students would normally far exceed three. For the sake of demonstrating our proposed technique in a clear manner, however, the number of respondents is limited to three.

The hypothetical rating given to each of the four hypothetical classes by each prospective student is listed in Table 2 under the variable entitled Y. The values for the factors that contain the information regarding the Number of class meetings per week and the Location that corresponds to these ratings are listed in Table 2 under the symbols N_1 and L_1, respectively. In addition, the values for the three-person variables are also listed in Table 2 under the symbols P_1, P_2, and P_3.

Table 2.
Variables Used in the Regression Analyses

Variables and Values							
Y	N_1	N_2	L_1	L_2	P_1	P_2	P_3
10	1	0	1	0	1	0	0
8	1	0	0	1	1	0	0
6	0	1	1	0	1	0	0
4	0	1	0	1	1	0	0
5	1	0	1	0	0	1	0
3	1	0	0	1	0	1	0
6	0	1	1	0	0	1	0
7	0	1	0	1	0	1	0
8	1	0	1	0	0	0	1
6	1	0	0	1	0	0	1
5	0	1	1	0	0	0	1
4	0	1	0	1	0	0	1

Interaction Variables

As previously mentioned, interaction variables must be generated and included in the multiple regression model to determine if factor-respondents interaction effects exist. These interaction terms are generated by first creating a companion variable for each factor variable in the study. The values contained in the variable that serves as the companion variable to the Number of meetings per week variable are zero when the value for N_1 is one. And the value is one when the value for N_1 is zero. The values contained in the variables that serve as the companion variable to the location variable are generated in the same manner. The companion variables for the Number of meetings per week and the Location variables, which are represented by the symbols of N_2 and L_2 respectively, are listed in Table 2.

The next step in generating the variables required to test the factor-respondents interaction effects requires that each of the person variables (P_1, P_2 and P_3) be multiplied by each of the two factor variables (N_1 and L_1) and by each of the two companion variables (N_2 and L_2). The 12 interaction variables, which are formed by multiplying the factor and companion variables by the person variables, are listed in Table 3. The values contained in each interaction variable are listed in Table 4.

Table 3.
Variables Used to Generate the 12 Interaction Variables

Interaction Variables
$X_{10} = N_1 * P_1$
$X_{11} = N_1 * P_2$
$X_{12} = N_1 * P_3$
$X_{13} = N_2 * P_1$
$X_{14} = N_2 * P_2$
$X_{15} = N_2 * P_3$
$X_{16} = L_1 * P_1$
$X_{17} = L_1 * P_2$
$X_{18} = L_1 * P_3$
$X_{19} = L_2 * P_1$
$X_{20} = L_2 * P_2$
$X_{21} = L_2 * P_3$

Table 4.
Interaction Variables Used in the Regression Analyses

Variables and Values											
X_{10}	X_{11}	X_{12}	X_{13}	X_{14}	X_{15}	X_{16}	X_{17}	X_{18}	X_{19}	X_{20}	X_{21}
1	0	0	0	0	0	1	0	0	0	0	0
1	0	0	0	0	0	0	0	0	1	0	0
0	0	0	1	0	0	1	0	0	0	0	0
0	0	0	1	0	0	0	0	0	1	0	0
0	1	0	0	0	0	0	1	0	0	0	0
0	1	0	0	0	0	0	0	0	0	1	0
0	0	0	0	1	0	0	1	0	0	0	0
0	0	0	0	1	0	0	0	0	0	1	0
0	0	1	0	0	0	0	0	1	0	0	0
0	0	1	0	0	0	0	0	0	0	0	1
0	0	0	0	0	1	0	0	1	0	0	0
0	0	0	0	0	1	0	0	0	0	0	1

Regression Models

Two regression models are required to statistically test the factor-respondents interaction effects. One model, which is referred to as the Full Model contains the eight linearly independent interaction variables. It should be noted that these eight variables are designed to measure the amount of variation in the ratings associated with the main effects of number of meetings and location, and the respondents as well as the factor-respondents interaction effects. The Full Model would be as follows:

$$Y = a + b_{10}X_{10} + b_{13}X_{13} + b_{14}X_{14} + b_{15}X_{15} + b_{17}X_{17} + b_{18}X_{18} + b_{19}X_{19} + b_{20}X_{20} + e$$

The other model, which is referred to as the Restricted Model, contains the two variables that represent the Number of classes per week factor, the Location factor, and the

two linearly independent person variables. The Restricted Model is as follows:

$$Y = a + b_1N_1 + b_2L_1 + b_3P_1 + b_4P_2 + e$$

When these regression models were used to analyze the respondents' ratings of the hypothetical classes, the R^2 values for the Full Model and the Restricted Model are .943 and .390 respectively. The difference between these two R^2 values, which is equal to .553, is attributed to the factor-respondents interaction effects.

This difference between the two R^2 values is statistically tested with an *F* test by using the following formula:

$$F = \frac{(R_F^2 - R_R^2) / dfn}{(1 - R_F^2) / dfd}$$

where:

1. R_F^2 represents the R^2 value for the Full Model.

2. R_R^2 represents the R^2 value for the Restricted Model.

3. dfn represents the value that is equal to the difference between the number of linearly independent variables in the Full Model minus the number of linearly independent variables in the Restricted Model.

4. dfd represents the value that is equal to the number of cases minus the quantity one plus the total number of linearly independent variables contained in the Full Model. It should be noted that the number of cases is equal to the number of respondents multiplied by the number of hypothetical products.

Since the number of cases in this example is 12 or (3 respondents x 4 products) and the Full and Restricted Models contain eight and four linearly independent variables respectively, the dfn value is 4 or (dfn = 8 - 4) and the dfd value is 3 or (dfd = 12 - 9). Thus, the *F* value for the difference between the R^2 values (.553) would be calculated as follows:

$$F = \frac{(.943 - .390) / 4}{(1 - .943) / 3} = 7.28$$

The probability for this *F* value is .067.

Since the denominator degrees of freedom value will be quite small when this technique is used, the power of the *F* test used to test for the factor-respondents interaction effects will tend to be low. To increase the power of this test, we suggest that a researcher use a liberal alpha level, such as .25. This practice is similar to the one used by researchers who set a high alpha value, usually at the .50 level, when attempting to determine if an outlier exists in a regression analysis with the *F* tests of Cook's distance measures (Neter, Wasserman & Kutner, 1985).

Since the probability value of this *F* test (F = 7.28, p = .067) is less than the alpha level of .25, evidence exists that would allow the researcher to conclude that it may be misleading to aggregate the data when interpreting the influences of the various factors on the respondents' ratings. That is, the researcher may find it more informative to segment the respondents based on the differing influences of the factors on their ratings.

Discussion

In this article we have attempted to describe a technique that a researcher could use to determine whether respondents' ratings, which are obtained in a conjoint study, should or should not be analyzed and interpreted for each respondent. This technique is based on the position that the data should not be aggregated when factor-respondents interaction effects exist.

To determine if respondent-factor interaction effects are present, the researcher would design two regression models. The first model would include a series of variables that measure the amount of variation in the ratings that is associated with the factor-respondents interaction effects as well as the variation associated with the factors and the respondents. The second model contains only the variables that will measure the amount of variation in the ratings associated with the factors and the respondents.

The difference between the R^2 values of the Full and Restricted Models is equal to the proportion of variation in the ratings of the hypothetical products that is associated with the factor-respondents interaction effects. This difference is statistically tested with an *F* test. Since the denominator degrees of freedom value will tend to be small in this procedure, the researcher would compare the probability of this *F* value to a liberal alpha value of, possibly .25. If the probability value of the *F* test is less than the alpha value, the researcher would question the appropriateness of analyzing the aggregate data-set and interpreting the results.

Only one simple type of conjoint analysis was used in this article to demonstrate how this technique could be used to assist the researcher in determining whether it is appropriate to aggregate the data. The reader should be aware that the technique, as presented in this article, may need to be modified if it is to be appropriately applied to more complicated conjoint studies.

It is important to note that the appropriateness of using this technique to determine whether the analysis should be conducted on the aggregate data is not restricted to just conjoint studies. We believe that this technique would be equally valuable for researchers who utilize repeated measures designs and the study involves more than one respondent. One of the major problems researchers encounter when analyzing aggregate scores for respondents with repeated measures is the possibility of not being able to identify critical incidences. For example, consider a repeated measures study in which the scores for every respondent in the repeated measures design exhibits a roller coaster effect over time, but the peaks and valleys occur in different time peri-

ods. When one aggregates such scores, the analysis may appear to be linear, although not one of the respondent's possesses scores that are, in fact, linear over time. The specific techniques that could assist a researcher in determining whether it is appropriate to analyze the aggregate data in such studies, although beyond the scope of this article, are similar to the technique that we have discussed.

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Estimating the True Accuracy of Regression Predictions

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Abstract

Given the lack of mathematical proof to decide upon the best estimation technique, the author presents his comparison of four closed-formula estimators (Burkett, Claudy, Rozeboom, Browne) and the omit-one method for estimating TRS, the true shrunken correlation (not to be confused with TR, the true multiple correlation). The recommendations are based on artificial populations with known TRS.

We must distinguish between two concepts that are usually confused: the true multiple correlation that I shall denote *TR*, and the true shrunken correlation that I shall denote *TRS*. Both of these differ from the observed multiple correlation *R*, which is simply the correlation in the present sample between the true criterion or dependent variable *Y*, and the estimates of *Y* made from the regression.

TR answers this question: If we derived the same regression in the total infinite population, thereby finding the true regression slopes, what value would we observe for *R*?

TRS answers a different question: Given that we have derived the regression in the sample, and have presumably not found the true population regression weights, what correlation would we find between *Y* and $\hat{Y}$ if we were to apply this set of regression weights to the entire population?

The first question asks in effect how good these *variables* are at predicting *Y*, while the second asks how good these *weights* are. When we ask about the variables, we pretend we could find the true population weights. But when we ask about the weights, we are asking about the weights we have already found.

The question about variables (involving *TR*) is usually of most interest in questions involving cause and effect, e.g., How important is education in determining income or attitude toward abortion? The question about weights (involving *TRS*) is usually of most interest in practical prediction problems. If we derive a regression in one sample, and use that regression to estimate the future performance of students or workers not in the original sample, what will be the correlation between our estimates and their actual performance?

TRS is always below *TR*, because in estimating *TR* we are asking what *R* would be if we found the true population weights. But by definition those weights are the best weights for the population, and are thus almost certainly better than the weights we have found in one particular sample. *TRS* is asking how well those sample weights would work, and they almost certainly would not work as well as the true weights. Therefore our estimate of *TRS* is always somewhat below our estimate of *TR*.

The standard formula for estimating *TR* is

$$\textit{Adjusted } R^2 = ARS = R^2 - \frac{P(1-R^2)}{N-P-1}$$

This formula is used in nearly every standard regression program. Note that N is sample size, and P is number of predictors.

The irrelevance of collinearity

At first it seems obvious that *TR* and *TRS* would fall further below *R* when collinearity is high than when it is low. After all, collinearity increases the errors with which individual regression slopes are estimated, and these errors are what cause *TR* and *TRS* to be below the observed multiple correlation *R*. Therefore it at first seems obvious that since collinearity increases those errors, it must increase the amount by which *TR* and *TRS* fall below *R*.

Surprisingly, however, collinearity can be ignored in estimating *TR* and *TRS*. The point that is ignored in the last paragraph is that under collinearity, errors in individual regression slopes tend to cancel each other out. This is one of the most remarkable features of regression. To explain it we will consider the simple case in which the regression has only two predictor variables X_1 and X_2, which we will assume are highly correlated positively. Let b_1 and b_2 denote the regression slopes of these two variables.

It turns out that the errors in b_1 and b_2 are not independent. In samples in which b_1 overestimates its true value, on the average b_2 underestimates its true value, and vice versa. But since X_1 and X_2 are highly correlated the overestimation in one slope tends to cancel out the underestimation in the other slope, with the result that on the average *Y* is estimated as accurately as if there had been no collinearity. The greater the collinearity, the more errors will cancel each other out.

The result is that even though individual slopes tend to be estimated less accurately under collinearity, *Y* and *R*

are estimated no less accurately. Thus the observed multiple correlation R tends to be no higher, relative to *TR* and *TRS*, under collinearity than when the predictor variables are mutually independent. There are rigorous mathematical proofs of this claim, in books like Draper and Smith (1981) and Graybill (1961).

Four Closed-Formula Estimators of TRS

There is no clear agreement about the best way to estimate TRS. The remainder of this article describes and evaluates five estimates of TRS. Three of the formulas are quite simple. One by Burket (1964) is

$$\textit{Burket estimate} = \sqrt{\frac{NR^2 - P}{R(N - P)}}$$

An estimator by Claudy (1978) is

$$\textit{Claudy estimate} = 2\sqrt{ARS} - R$$

An estimator by Rozeboom (1978) is

$$\textit{Rozeboom estimate} = \sqrt{1 - \frac{N+P}{N-P}(1 - R^2)}$$

A slightly more complicated procedure by Browne (1975) requires the user to first compute an estimate of the fourth power of TR, by the formula

$$Rho4 = ARS^2 - \frac{2P(1 - ARS)^2}{(N-1)(N-P+1)}$$

If this formula yields a negative value for Rho^4, then set $Rho^4 = 0$. Then TRS is estimated by

$$\textit{Browne estimate} = \sqrt{\frac{(N-P-3)Rho4 + ARS}{(N-2P-2)ARS + P}}$$

When these four estimates are plotted against the observed multiple correlation *R* for fixed values of *N* and *P*, they all approach *R* as *R* approaches 1. Thus the right end of each curve approaches a straight line with a slope of 1. As *R* declines, all four curves gradually get steeper until they hit the horizontal axis. It is unreasonable to estimate a negative value of *TRS*, so all four estimates are taken to be 0 if the above formulas yield negative estimates of *TRS* or TRS^2. When the estimators are ranked from most liberal to most conservative, they generally fall in the order: Burket (most liberal), Browne, Claudy, Rozeboom.

The Omit-one Method for Estimating TRS

All the previous formulas assume multivariate normality. We now describe an alternative approach that dispenses with this requirement. I call it the *omit-one* approach. Its computation is considerably more complex than for any of the previous approaches.

Imagine omitting one case from a sample of *N* cases, fitting the regression in the remaining sample of N-1 cases, and then using that regression to estimate *Y* for the one case that was omitted. Let the difference between the actual and estimated Y-scores for that one case be denoted *DCR*, for "deleted-case residual". Imagine computing *DCR* for every case in the sample, by running the regression *N* times, each time with one case omitted. If you then use the *N* values of *DCR* to estimate the accuracy of the regression predictions, you are using the "omit-one" approach.

Surprisingly, it turns out that one can compute the *N* values of *DCR* without actually computing the *N* omit-one regressions. Nearly every standard regression program computes residuals, and a great many programs will compute for each case a value that is called either LEVERAGE or *H*. This value measures the "atypicalness" of a case's scores on the predictor variables; a case whose predictor scores all fall exactly at the means has the lowest possible value of LEVERAGE. But for our purpose here, the important fact about LEVERAGE is that it can be used to compute *DCR* via the formula

DCR = RESIDUAL/(1 - LEVERAGE)

Then *Y - DCR* gives the estimates of *Y* computed by the omit-one regressions, but without the work of actually repeating the regression *N* times.

At first it would seem that simply correlating these values of *Y - DCR* with the actual *Y* values would give a good estimate of *TRS*. However, it turns out that this approach actually gives an overly conservative estimate of *TRS*. The reason is that if one case has an exceptionally high value of *Y*, then omitting it will lower the *Y*-mean of the remaining sample, and will thus lower the estimate of *Y* for that one case. This will tend to lower the correlation just mentioned. But errors in estimating means do not lower the true value of *TRS* at all, so we want to somehow correct for this lowering. You can do this with the help of the formula:

Mean of remaining sample = *M*N/(N-1) - Y/(N-1)*

where the "remaining sample" is the sample after the deletion of the one case, and *M* is the mean of the total sample. This formula shows that by adding *Y/(N-1)* to each of the (*N*-1) other scores, we would change their mean to *M*N/(N-1)*. That would fix the problem, since that value is independent of *Y*. But adding *Y*/(*N*-1) to the (*N*-1) other scores changes the residual of the deleted case *Y* by that same amount. Thus we can instead adjust the residual by that amount. But we use the residual simply to compute the predicted value of *Y*, so we can instead adjust that value by the same amount. The "bottom line" of this reasoning is that we can compute an "adjusted deleted-case prediction" *ADCP* for each case from the formula

ADCP = *Y* - RESIDUAL/(1-LEVERAGE) + *Y*/(*N*-1)

Correlating these *ADCP* values with the original *Y* values then gives an estimate of *TRS*.

Comparison of the five estimators

Sometimes an estimator can be proven mathematically to be the best possible estimator. No such proof is available for any of the estimators of TRS, so I have compared them numerically. I used a 7 x 6 x 16 array of values of the sample size *N*, the number of predictors *P*, and *TR* respectively. I let *N* range from 40 to 100 in increments of 10, let *P* range from 5 to 30 in increments of 5, and let *TR* range from .05 to .80 in increments of .05. For each of these 7 x 6 x 16 or 672 combinations of *N*, *P*, and *TR*, I drew 1000 samples and fitted a multiple regression in the sample. Because the true population regression slopes were known for the artificial populations I used, I could compute the exact value of *TRS* for each sample regression. I then used each of the five estimators in turn to estimate *TRS*. For each estimator I computed two statistics, *LIBCOUNT* and *RMSE*, for each of the 672 combinations. *LIBCOUNT* was defined as the number of times the estimate of *TRS* exceeded the true *TRS* for that sample, and *RMSE* was the root mean squared difference between true and estimated values of *TRS*.

In a typical problem the investigator of course knows *N* and *P*, but does not know *TR*. It seems unreasonable to average *RMSE* or other measures of accuracy across the various values of *TR*, because this assumes that these values occur with equal frequency in real problems. Since the Burket and Rozeboom formulas are respectively the most liberal and most conservative of the four closed-formula estimators, Burket tends to be best when *TR* is high, while Rozeboom tends to be best when *TR* is low. To avoid this problem I always used the *worst* value of *LIBCOUNT* or *RMSE* across the 16 values of *TR* studied for a given combination of *N* and *P*, calling these worst values *LIBMAX* and *RMSEMAX* respectively. By this means, the 672 values of *LIBCOUNT* and *RMSE* for each method are reduced to 42 values of *LIBMAX* and *RMSEMAX*.

Clearly the worst value of *RMSE* is the largest. For each estimator these largest values always occured for *TR* values between .30 and .70; they were never at the highest or lowest values of *TR* studied. I also defined *LIBMAX* as the largest of the 16 values of *LIBCOUNT*, rather than the value farthest from 500. (500 is half the number of samples used for each combination of *N* and *P*.) This seems reasonable to me because the whole purpose of estimating *TRS* is to avoid an overly liberal estimate of a regression's predictive power, and *RMSE* provides an alternate statistic that treats overestimates and underestimates equally.

It seems reasonable to consider LIBMAX values of 550 and below as acceptable. This allows for a little random error caused by the fact that only 1000 samples were used, and also allows a modest amount of nonrandom error. By this criterion all 42 values of *LIBMAX* were acceptable for Browne and for Omit-one; their highest values of *LIBMAX* were 549 and 546 respectively. For all five methods the highest *LIBMAX* value came at the highest *P* and lowest *N* studied, with $P = 30$ and $N = 40$. For Burket, *LIBMAX* was acceptable only if $P = 5$, or if $P = 10$ and $N \geq 80$; its highest *LIBMAX* value otherwise was 877. For Claudy, *LIBMAX* was acceptable only if $P = 5$, or if $P = 10$ and $N \geq 70$, or if $P=15$ and $N \geq 80$; its highest *LIBMAX* value otherwise was 759. For Rozeboom, *LIBMAX* was acceptable only if $P = 5$, or if $P = 10$ and $N \geq 60$, or if $P = 15$ and $N \geq 80$; its highest *LIBMAX* value otherwise was 730.

For each of the 42 combinations of *N* and *P*, I also identified the method with the lowest value of *RMSEMAX*. With one apparently random exception, the Burket method was always best by this criterion when $P = 5$; and with two apparently random exceptions, the Omit-one method was always best by this criterion when $P \geq 10$. When the Omit-one method is ignored as too complex, it turns out that with one exception at the margin, the Burket method is best when $N/P > 3.5$, while the Browne method is best when $N/P < 3.5$.

In summary, though Claudy and Rozeboom do give moderately good estimates, there seems to be no good reason to use those estimators, since others consistently do better by both the *LIBMAX* and *RMSEMAX* criterion. The remaining three methods can be ranked in terms of simplicity, with Burket simplest, Browne next, and Omit-one most complex. When multivariate normality can be assumed and $N/P > 8$, the simple Burket rule is quite satisfactory since its *LIBMAX* value stays below 550. When multivariate normality can be assumed and $N/P < 8$, Browne seems superior. All 42 of its *RMSEMAX* values exceeded those of Omit-one, but never by as much as 10%. But if computing power is no major obstacle then Omit-one seems the clear choice. None of its *RMSEMAX* values exceed those of Burket by more than 1.5%, and none at all exceed those of Browne. And Omit-one has the further major advantage of requiring no assumption of multivariate normality—an assumption that is quite important for the competing methods.

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Categorical or Continuous Interaction?

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Abstract

McClelland and Judd (1993) concluded that many interactions have been found with categorical variables, but few with continuous variables. Using a mathematical point of view, they concluded that investigating interactions with continuous variables was less powerful than with categorical variables. This article analyses the issue from three other points of view: design of the study, measurement of the independent variable, and nature of the question asked. Our present conclusion is that the choice of either categorical or continuous interaction depends upon the research hypothesis being posed and the desired conclusions.

While many statistics texts and researchers view interaction as either a bothersome assumption or a mettlesome outcome clouding the interpretation of main effects, some researchers realize that interaction may be an interesting phenomenon in its own right. Those who do not believe in panaceas argue that what works best may depend upon certain other factors -- implying the need for interaction.

McClelland and Judd (1993) discussed two major kinds of interactions--those resulting from categorical data and those resulting from continuous data. They pointed out that few researchers have obtained interactions with continuous variables, and they presented a mathematical rationale for why this is the case.

While we do not disagree with their mathematics, the purpose of this paper is to point out the differences between categorical interaction and continuous interaction. We do this by focusing on three areas: (a) design differences, (b) measurement differences, and (c) nature of the interaction research hypothesis.

Design Differences

The basic design difference is how the independent variable is conceptualized. The independent variable can be conceptualized as either distinct levels (categorical) or as a continuum. *Categorical* variables are usually studied in controlled situations wherein there is maximum control over the nature of the levels--often maximizing the differences between the levels (as in studies using treatment and control groups). Results from such studies can be generalized to those levels, but not to other levels, not even to levels between the studied levels. Categorical designs are often set up such that the independent variables are uncorrelated, allowing for the additive partitioning of the sum of squares.

Continuous independent variables are usually obtained in a field setting and therefore lack the rigor of laboratory control. Continuous variables do allow for the generalization of results to values between those actually sampled. Continuous variables are usually correlated, but this is the way the real world is and thus how the real world should be modeled.

Measurement Differences

Categorical variables can result from either an inherently nominal variable or an arbitrary categorization of an inherently continuous variable. A continuum may be artificially dichotomized, trichotomized, etc. The limits of these categories are usually determined from the data (such as a median split).

Arbitrary splits in the data limit the comparing of results from one study to another. For example, the numerical value of the median split in one study is unlikely to be the same as in another study. With categorical data, the generalizations are limited to the specific levels that were investigated, whereas the generalizations with continuous data can be made to values between the actual numbers observed.

Continuous variables should be used when one can assume an underlying continuum. Continuous variables allow for smooth continuous relationships to be identified, whereas categorical variables allow only for differences (not even stair-step kinds, unless *a priori* trend analyses are performed). Once a smooth relationship is found, further study must identify if that relationship represents the true functional relationship, or how the variables are scaled.

Identification of the true functional interaction will likely not be easy. But the interactions are likely to be continuous, and the relationship will be a function of how the construct is measured. The GLM approach facilitates investigation of various types of interactions (McNeil, Newman, & Kelly, 1996), as will be shown in a later section.

Nature of the Interaction Research Hypothesis

Categorical interaction is defined as "the differences are different." As a consequence, the test is usually

nondirectional, simply looking for any interaction whatsoever. Categorical interaction research hypotheses are usually tested to make sure that the assumption of no interaction is tenable so that the main effects can be interpreted. That is, interaction is usually not viewed as an interesting phenomenon in its own right.

In addition, all possible interactions are usually tested simultaneously. This can be determined from the degrees of freedom associated with the test (4 degrees of freedom in Table 1). The technique of planned comparisons can be extended to the interaction question, but seldom is. For instance, trend effects could be planned ahead of the data collection, and could be the focus of the study instead of the main effects being the focus. For instance, in a two-treatment, pretest-posttest design, the treatment-by-time interaction is the only interesting hypothesis. Both the time and treatment main effects are smaller than what might otherwise be expected--because of the expectation that the two groups are similar at pretest.

Table 1.

Source Table for the Data in Figure 1, with Specific Trend Interactions

Source	SS	df	MS	F	p
G	0.00	4	0.00	0.00	1.00
T	0.00	1	0.00	0.00	1.00
G*T	60.00	4	15.00	1500.00	0.0001
G1* T	60.00	1	60.00	6000.00	0.0001
G2* T	0.00	1	0.00	0.00	1.00
G3* T	0.00	1	0.00	0.00	1.00
G4* T	0.00	1	0.00	0.00	1.00
ERROR	0.20	20	.01		

Continuous. The definition of interaction with continuous variables is how one variable effects the criterion variable, depending on the value of another continuous variable--the multiplicative effect of two predictors on the criterion. Because some thought is put into the test, the research hypothesis is usually directional, that is one expects high scores on one variable to have a catalytic effect on the criterion with high scores on the other variable. Thus, this catalytic effect is expected, and the researcher hopes to discover it.

Figure 1.

Data analyzed in Study

G	T	D	G	T	D	G	T	D
1	1	2.1	1	1	1.9	1	1	2
2	1	3.1	2	1	2.9	2	1	3
3	1	4.1	3	1	3.9	3	1	4
4	1	5.1	4	1	4.9	4	1	5
5	1	6.1	5	1	5.9	5	1	6
1	2	6.1	1	2	5.9	1	2	6
2	2	5.1	2	2	4.9	2	2	5
3	2	4.1	3	2	3.9	3	2	4
4	2	3.1	4	2	2.9	4	2	3
5	2	2.1	5	2	1.9	5	2	2

Numerical Example

Figure 1 contains fictitious data for a 2 x 5 design. The top part of Table 1 is the source table resulting from these data. Note that the G*T interaction source having 4 degrees of freedom is significant. The bottom part of Table 1 illustrates the source table when all possible interaction trends are analyzed. Note that all of the sum of squares is attributed to the interaction between the "linear trend" in G and T. The global interaction term in Table 1 lumped together all the interaction sums of squares and produced a global test of the interaction. Since the F is significant, the conclusion is that there is interaction somewhere, but the "where" cannot be determined. What is also possible, of course, is that the global test may lead to no significance, while a specific source could be significant.

Researchers who analyze continuous data usually only test the linear interaction--the G^1*T interaction in Table 1. The data in Figure 1 can be treated as continuous by assigning numbers to the levels. We have assigned a "1" to the data in level 1 of G, a "2" to level 2 of G, a "3" to level 3 of G, a "4" to level 4 of G, and a "5" to level 5 of G (and a "1" to level 1 of T and a "2" to level 2 of T). Thus we have two continuous variables, G and T, as well as the trend interactions. Figure 2 contains the General Linear Model approach for testing the linear interaction. The G^1*T linear interaction is tested by comparing the Full Model in part A with the Restricted Model in part A. Notice that the F and probability results are the same as in Table 1. Part B of Figure 2 presents a slightly different approach, testing the linear interaction over and above the linear effects of the two variables. Part C

indicates another way to test the interaction--which will be discussed later. Because these three approaches use different models, they are actually testing slightly different research questions. One would not want to make the error of incorrectly testing the "interaction question"--a type VI error as discussed by Newman, Deitchman, Burkholder, Sanders, and Ervin (1976), and Newman and Newman (1994).

Figure 2.

Various GLM Analyses of the interaction hypothesis.

A. Replication of the categorical approach

Full Model: $D = a*U + t*T + g1*G^1 + g2*G^2 + g3*G^3 + g4*G^4 + i1*G^1*T + i2*G^2*T + i3*G^3*T + i4*G^4*T + E1$
Want $i1 < 0$ Restrict $i1 = 0$

Restricted Model: $D = a*U + t*T + g1*G^1 + g2*G^2 + g3*G^3 + g4*G^4 + i2*G^2*T + i3*G^3*T + i4*G^4*T + E2$

Numerator MS:60.00	df: 1	F value: 6000.00
Denominator MS:0.01	df: 20	prob: 0.0001

B. Testing linear interaction over and above the two linear effects.

Full Model: $D = a*U + t*T + g*G + i*G^1*T + E3$
Want $i < 0$ Restrict $i = 0$

Restricted Model: $D = a*U + t*T + g*G + E4$

Numerator MS: 60.00	df: 1	F value: 7800.00
Denominator MS: 0.007692	df: 26	prob: 0.0001

C. Testing the interaction component.

Full Model: $D = a*U + i*G*T + E5$
Want $i < 0$ Restrict $i = 0$

Restricted Model: $D = a*U + E6$

Numerator MS: 60.00	df: 1	F value: 8400.00
Denominator MS: 0.0071428	df: 28	prob: 0.0001

Relying on the trend notions discussed above, other kinds of interactions can be studied. One would want to investigate such interactions for one of two reasons. Either the true functional relationship between the independent variables and dependent variable is that way, or there is a scaling problem with one or both independent variables, and the nonlinear interaction maps the scaling problem.

Just as with the categorical variables in Part C of Figure 2, one interaction term between continuous variables may explain all the variance. McNeil (1970) illustrated how Newton might have obtained the Law of Gravity, which contains only one interaction term, and no main effects terms. The interaction term is between the linear component of gravity and the squared value of time ($D = 1/2\ G*T^2$).

Conclusion

Clearly different interaction questions are being asked with categorical and continuous data. Since all of the interactions are lumped together in the categorical approach, one would expect to more often find significant interactions with the categorical approach. But what the researcher does with those interactions (usually ignores them and looks at simple effects) and the extent to which the researcher is really interested in finding them (blast it, muddies up my main effects again!) is probably more important than whether or not they are found. Replication of unexpected interactions is another issue that should be considered, but unfortunately is not. If you don't expect them and you don't want them, why would you even consider replicating the research to find out if they are a stable phenomenon?

Testing for "interaction" is, after all, testing a specific hypothesis, and that should never be forgotten--but it often is. If two statistical tests are testing different questions, then they should not be compared for their relative power. What they should be compared for is the reasonableness of the research question that is being tested. If one is only interested in making sure that the assumption of no interaction is a reasonable assumption, then the use of categorical interactions makes sense. If one is interested in determining functional relationships, then the use of continuous interactions makes sense.

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992

Index of Authors: 1994 - '96

The **Index of Authors** and the **Index of Articles** are alphabetical listings of MWER articles from 1994-96 indicating the issues where they can be found. Abstracts for these articles can be found on the MWERA Web site, http://www.acs.ohio-state.edu/units/education/mwera/contents.htm

Peter W. Airasian, Boston College
Through Their Eyes: Teacher Self-Assessment, Volume 9, No 1 Winter 1996

Daisy E. Arredondo, University of Missouri - Columbia
Integrated Curriculum: Its Use, Initiation and Support in Midwestern Schools, Volume 9, No 2 Spring 1996

Robert S. Barcikowski, Ohio University
Hotelling-Lawley Trace and Pillai's Trace, Volume 7, No 4 Fall 1994
Precision Power and Its Application to the Selection of Regression Sample Sizes Volume 9, No 4 Fall 1996

T. Mark Beasley, St. John's University, New York
Regression Analyses for ABAB Designs in Educational Research, Volume 9, No 4 Fall 1996

Carolyn Benz, University of Dayton
Factors Underlying Effective College Teaching: What Students Tell us, Volume 8, No 1 Winter 1995

Stephen J. Blatt, University of Dayton
Factors Underlying Effective College Teaching: What Students Tell us, Volume 8, No 1 Winter 1995

Carol Briscoe, University of West Florida
Making the Grade: Perspectives on a Teacher 's Assessment Practices, Volume 7, No 4 Fall 1994

Gordon P. Brooks, Ohio University
Precision Power and Its Application to the Selection of Regression Sample Sizes Volume 9, No 4 Fall 1996

Jere Brophy, Michigan State University
Convention Address: Trends In Research on Teaching, Volume 7, No 1 Winter 1994

C. R. Balach, West Georgia College
An Investigation of Variables Related to Student Achievement, Volume 8, No 2 Spring 1995

Christy Castleman, Murray State University
An Investigation of Variables Related to Student Achievement, Volume 8, No 2 Spring 1995

Clint Chase, Indiana University
Estimating the Reliability of Criterion-Referenced Tests Before Administration, Volume 9, No 2 Spring 1996

Lyn Corno, Teachers College, Columbia University
Working Toward Foresight and Follow-through, Volume 8, No 1 Winter 1995

Richard B. Darlington, Cornell University
Estimating the True Accuracy of Regression Predictions, Volume 9, No 4 Fall 1996

Ayres D'Costa, The Ohio State University
Book Review: Sato Takahiro, Volume 7, No 2 Spring 1994

David L. DiLalla, Southern Illinois University
What is "Heritability" and What is it Not?, Volume 9, No 1 Winter 1996

Lisabeth F. DiLalla, Southern Illinois University
What is "Heritability" and What is it Not?, Volume 9, No 1 Winter 1996

Nina G. Dorsch, Northern Illinois University
Forging "Connections": A Frames Analysis of the Implementation of a Pilot Interdisciplinary Program, Volume 9, No 1 Winter 1996

Orpha K. Duell, Wichita State University
Tenure and Promotion: Questions to Ask and Strategies for Success, Volume 7, No 2 Spring 1994

Vicki A. Edwards, Deer Valley Unified School District
One-Year Stability of the Elementary Reading Attitude Survey, Volume 8, No 1 Winter 1995

Ronald S. Elliott, Ohio University
Investigation of Power Using F Approximations for the Hotelling-Lawley Trace and Pillai's Trace, Volume 7, No 4 Fall 1994

John W. Fraas, Ashland University
The Use of Multiple Regression Models to Determine if Conjoint Analysis Should Be Conducted on Aggregate Data, Volume 9, No 4 Fall 1996

Louise E. Fleming, Ashland University
Consolidation Comes to Ashland County, Ohio, Volume 8, No 4 Fall 1995

Donald J. Freeman, Arizona State University
Is Self-Confidence in Teaching Multidimensional or Unidimensional? An Exploratory Study, Volume 7, No 1 Winter 1994

Tom Ganser, University of Wisconsin-Whitewater
Mentor Roles: Views of Participants in a State-Mandated Program, Volume 9, No 2 Spring 1996

W. Gregory Gerrick, Ashland University
The Responsibility of Higher Education In Providing Leadership In The Restructuring And Renewal of Public Schools: An Invited Address to the 1993 MWERA Conference, Volume 7, No 2 Spring 1994

Karen L. Graves, Denison University
The Impact of the Differentiated Curriculum on African American Women High School Students: The Case in St. Louis , Volume 8, No 4 Fall 1995

James L. Green, College of Mount St. Joseph
The Children of the Dream: Postwar Planning for The First Camp of the Children as International Summer Villages Organization , Volume 8, No 4 Fall 1995

Tianqi Han, Northern Illinois University
Hierarchical Modeling Techniques to Analyze Contextual Effects: What Happened to the Aptitude by Treatment Design?, Volume 9, No 4 Fall 1996

Sandra Hollingsworth, Michigan State University
The "Problem" of Gender in Teacher Education , Volume 8, No 2 Spring 1995

Richard T. Houang, Michigan State University
Is Self-Confidence in Teaching Multidimensional or Unidimensional? An Exploratory Study, Volume 7, No 1 Winter 1994

Elizabeth K. Johnson, Eastern Michigan University
Introduction To Another Voice: Educational Life-Writing As Responsible Text, Volume 8, No 4 Fall 1995

Ann M. Jones, Boston College
Through Their Eyes: Teacher Self-Assessment , Volume 9, No 1 Winter1996

Hripsime A. Kalaian, Michigan State University
Is Self-Confidence in Teaching Multidimensional or Unidimensional? An Exploratory Study, Volume 7, No 1 Winter 1994

Susan Kent, The Ohio State University Newark
Transition to Graduate Level Elementary Teacher Preparation: A Formative Analysis, Volume 9, No 2 Spring 1996

Thomas R. Knapp, The Ohio State University
A statistical critique of Herrnstein & Murray's The Bell Curve, Volume 9, No 1 Winter 1996
Semi-Partial Correlations: I Don't Need Them, You Can Have Them, Volume 9, No 4 Fall 1996

Joseph C. Kush, Duquesne University
One-Year Stability of the Elementary Reading Attitude Survey, Volume 8, No 1 Winter 1995

Dennis W. Leitner, Southern Illinois University
My Swing at the Bell! , Volume 9, No 1 Winter 1996

Bobby Malone, Murray State University
An Investigation of Variables Related to Student Achievement, Volume 8, No 2 Spring 1995

Zulkifli A. Manaf, University of Malaya
The Identification of a Model of Teaching Behaviors of Preschool student Teachers, Volume 7, No 4 Fall1994

Gregory J. Marchant, Ball State University
Mentoring Education: An Interview with Carolyn M. Evertson, Volume 9, No 2 Spring 1996
Voices in Education , Volume 7, No 1 Winter 1994

Ronald N. Marso, Bowling Green State University
Relationships of Prospective Teachers' Personality Type and Locus of Control Orientation with Changes in Their Attitude and Anxiety about Teaching, Volume 7, No 2 Spring 1994

Michael T. McAleer, Duquesne University
One-Year Stability of the Elementary Reading Attitude Survey, Volume 8, No 1 Winter 1995

Lori Clancy McKinney, Governors State University
Assessing Understanding in School-aged Children, Volume 9, No 2 Spring 1996

Keith McNeil, New Mexico State University
Categorical or Continuous Interaction?, Volume 9, No 4 Fall 1996
Going Beyond the Literature Review with Meta-analysis, Volume 8, No 1 Winter 1995
Summarizing the Literature Review with Meta-analysis, Volume 7, No 4 Fall 1994

James V. Mead, Michigan State University
Some Issues in Constructing, Managing, and Using Large Qualitative Databases, Volume 7, No 2 Spring 1994

Carmen Montecinos, University of Northern Iowa
Book Review: Christian Faltis , Volume 8, No 2 Spring 1995

993 BEST COPY AVAILABLE

Index of Articles: 1994 -'96

Isadore Newman, The University of Akron
Categorical or Continuous Interaction?, Volume 9, No 4 Fall 1996
Educational Psychology: Future Directions An Interview with Anita Woolfolk, Volume 7, No 1 Winter 1994
Going Beyond the Literature Review with Meta-analysis, Volume 8, No 1 Winter 1995
Mentoring Education: An Interview with Carolyn M. Evertson, Volume 9, No 2 Spring 1996
Summarizing the Literature Review with Meta-analysis, Volume 7, No 4 Fall 1994
The Use of Multiple Regression Models to Determine if Conjoint Analysis Should Be Conducted on Aggregate Data, Volume 9, No 4 Fall 1996

Lana Nidiffer, University of Massachusetts, Amherst
From Matron to Maven: A New Role and New Professional Identity for Deans of Women, 1892, Volume 8, No 4 Fall 1995

Sharon E. Paulson, Ball State University
Parenting Style and Parental Involvement: Relations with Adolescent Achievement, Volume 7, No 1 Winter 1994

Fred L. Pigge, Bowling Green State University
Relationships of Prospective Teachers' Personality Type and Locus of Control Orientation with Changes in Their Attitude and Anxiety about Teaching, Volume 7, No 2 Spring 1994

Terrance T. Rucinski, RARCO, Inc
Integrated Curriculum: Its Use, Initiation and Support in Midwestern Schools, Volume 9, No 2 Spring 1996

Marlene Schommer, Wichita State University
Voices In Education , Volume 7, No 1 Winter 1994
Voices In Education , Volume 7, No 2 Spring 1994
Voices In Education , Volume 7, No 4 Fall 1994
Voices In Education , Volume 9, No 1 Winter 1996
Voices In Education , Volume 9, No 2 Spring 1996
Voices In Education On Authentic Assessment , Volume 8, No 2 Spring 1995

Dale H. Schunk, Purdue University
Motivation in Education: Current Emphases and Future Trends, Volume 9, No 2 Spring 1996

Janet K. Sheehan, Northern Illinois University
Hierarchical Modeling Techniques to Analyze Contextual Effects: What Happened to the Aptitude by Treatment Design?, Volume 9, No 4 Fall 1996

Jack Snowman, Southern Illinois University, Carbondale
MWER Feature: Research in Action Computer-Based Education: More Hype Than Help?, Volume 8, No 1 Winter 1995
Research Alive: All Our Children Learning , Volume 7, No 4 Fall 1994
Research in Action: Becoming a Better Teacher , Volume 9, No 2 Spring 1996
Research Alive: Educational Research Can Inform Educational Practice, Volume 7, No 1 Winter 1994

Terri Strand, MWERA Archivist/Historian
MWERA completes 20 years , Volume 9, No 2 Spring 1996

Mary R. Sudzina, The University of Dayton
Educational Psychology: Future Directions An Interview with Anita Woolfolk, Volume 7, No 1 Winter 1994
Responses to The Bell Curve: A Conversation with John Goodlad , Volume 9, No 1 Winter 1996
Setting An Agenda for Educational Renewal: A Conversation with John Goodlad, University of Washington, Volume 8, No 2 Spring 1995

Lucy F. Townsend, Northern Illinois University
Introduction To Another Voice: Educational Life-Writing As Responsible Text, Volume 8, No 4 Fall 1995

Marley W. Watkins, Deer Valley Unified School District
One-Year Stability of the Elementary Reading Attitude Survey, Volume 8, No 1 Winter 1995

Joseph Watras, University of Dayton
Federal Aid, Black Separatism, and the Public Schools, Volume 8, No 4 Fall 1995

Lyle J. White, Southern Illinois University
An Annotated Bibliography of Reviews of The Bell Curve, Volume 9, No 1 Winter 1996

John Delane Williams, The University of North Dakota
Missing Cells in Developmental Research, Volume 9, No 4 Fall 1996

Buford E. Wilson, Governors State University
Assessing Understanding in School-aged Children, Volume 9, No 2 Spring 1996

Benjamin D. Wright, University of Chicago
Composition Analysis , Volume 7, No 2 Spring 1994

BEST COPY AVAILABLE

An Annotated Bibliography of Reviews of The Bell Curve
Lyle J. White, Southern Illinois University
Volume 9, No 1 Winter 1996

Assessing Understanding in School-aged Children
Lori Clancy McKinney and Buford E. Wilson, Governors State University
Volume 9, No 2 Spring 1996

Book Review: Sato Takahiro
Ayres D'Costa, The Ohio State University
Volume 7, No 2 Spring 1994

Book Review: Christian Faltis
Carmen Montecinos, University of Northern Iowa
Volume 8, No 2 Spring 1995

Categorical or Continuous Interaction?
Keith McNeil, New Mexico State University
Isadore Newman, The University of Akron
Volume 9, No 4 Fall 1996

The Children of the Dream: Postwar Planning for the First Camp of the Children as International Summer Villages Organization
James L. Green, College of Mount St. Joseph
Volume 8, No 4 Fall 1995

Composition Analysis
Benjamin D. Wright, University of Chicago
Volume 7, No 2 Spring 1994

Consolidation Comes to Ashland County, Ohio
Louise E. Fleming, Ashland University
Volume 8, No 4 Fall 1995

Convention Address: Trends In Research on Teaching
Jere Brophy, Michigan State University
Volume 7, No 1 Winter 1994

Educational Psychology: Future Directions An Interview with Anita Woolfolk
Mary R. Sudzina, The University of Dayton
Isadore Newman, The University of Akron
Volume 7, No 1 Winter 1994

Estimating the Reliability of Criterion-Referenced Tests Before Administration
Clint Chase, Indiana University
Volume 9, No 2 Spring 1996

Estimating the True Accuracy of Regression Predictions
Richard B. Darlington, Cornell University
Volume 9, No 4 Fall 1996

Factors Underlying Effective College Teaching: What Students Tell us
Carolyn Benz and Stephen J. Blatt, The University of Dayton
Volume 8, No 1 Winter 1995

Federal Aid, Black Separatism, and the Public Schools
Joseph Watras, The University of Dayton
Volume 8, No 4 Fall 1995

Forging "Connections": A Frames Analysis of the Implementation of a Pilot Interdisciplinary Program
Nina G. Dorsch, Northern Illinois University
Volume 9, No 1 Winter 1996

From Matron to Maven: A New Role and New Professional Identity for Deans of Women, 1892 to 1916
Lana Nidiffer, The University of Massachusetts, Amherst
Volume 8, No 4 Fall 1995

Going Beyond the Literature Review with Meta-analysis
Keith McNeil, New Mexico State University
Isadore Newman, The University of Akron
Volume 8, No 1 Winter 1995

Hierarchical Modeling Techniques to Analyze Contextual Effects: What Happened to the Aptitude by Treatment Design?,
Janet K. Sheehan and Tianqi Han, Northern Illinois University
Volume 9, No 4 Fall 1996

The Identification of a Model of Teaching Behaviors of Preschool student Teachers
Zulkifli A. Manaf, The University of Malaya
Volume 7, No 4 Fall 1994

The Impact of the Differentiated Curriculum on African American Women High School Students: The Case in St. Louis
Karen L. Graves, Denison University
Volume 8, No 4 Fall 1995

Integrated Curriculum: Its Use, Initiation and Support in Midwestern Schools
Daisy E. Arredondo, University of Missouri - Columbia
Terrance T. Rucinski, RARCO, Inc.
Volume 9, No.2 Spring 1996

Introduction To Another Voice: Educational Life-Writing As Responsible Text
Elizabeth K. Johnson, Eastern Michigan University
Lucy F. Townsend, Northern Illinois University
Volume 8, No.4 Fall 1995

Investigation of Power Using F Approximations for the Hotelling-Lawley Trace and Pillai's Trace
Ronald S. Elliott and Robert S. Barcikowski, Ohio University
Volume 7, No.4 Fall 1994

An Investigation of Variables Related to Student Achievement
C. R. Bulach, West Georgia College
Bobby Malone and Christy Castleman, Murray State University
Volume 8, No.2 Spring 1995

Is Self-Confidence in Teaching Multidimensional or Unidimensional? An Exploratory Study
Hripsime A. Kalaian, Michigan State University
Donald J. Freeman, Arizona State University
Richard T. Houang, Michigan State University
Volume 7, No.1 Winter 1994

Making the Grade: Perspectives on a Teacher's Assessment Practices
Carol Briscoe, University of West Florida
Volume 7, No.4 Fall 1994

Mentor Roles: Views of Participants in a State-Mandated Program
Tom Ganser, University of Wisconsin-Whitewater
Volume 9, No.2 Spring 1996

Mentoring Education: An Interview with Carolyn M. Evertson
Gregory J. Marchant, Ball State University
Isadore Newman, University of Akron
Volume 9, No.2 Spring 1996

Missing Cells in Developmental Research,
John Delane Williams, The University of North Dakota
Volume 9, No.4 Fall 1996

Motivation in Education: Current Emphases and Future Trends
Dale H. Schunk, Purdue University
Volume 9, No.2 Spring 1996

MWERA completes 20 years
Terri Strand, MWERA Archivist/Historian
Volume 9, No.2 Spring 1996

MWER Feature: Research in Action Computer-Based Education: More Hype Than Help?
Jack Snowman, Southern Illinois University, Carbondale
Volume 8, No.1 Winter 1995

My Swing at the Bell!
Dennis W. Leitner, Southern Illinois University
Volume 9, No.1 Winter 1996

One-Year Stability of the Elementary Reading Attitude Survey
Joseph C. Kush, Duquesne University
Marley W. Watkins, Deer Valley Unified School District
Michael T. McAleer, Duquesne University
Vicki A. Edwards, Deer Valley Unified School District
Volume 8, No.1 Winter 1995

Parenting Style and Parental Involvement: Relations with Adolescent Achievement
Sharon E. Paulson, Ball State University
Volume 7, No.1 Winter 1994

Precision Power and Its Application to the Selection of Regression Sample Sizes
Gordon P. Brooks and Robert S. Barcikowski, Ohio University
Volume 9, No.4 Fall 1996

The "Problem" of Gender in Teacher Education
Sandra Hollingsworth, Michigan State University
Volume 8, No.2 Spring 1995

Regression Analyses for ABAB Designs in Educational Research
T. Mark Beasley, St. John's University, New York
Volume 9, No.4 Fall 1996

Relationships of Prospective Teachers' Personality Type and Locus of Control Orientation with Changes in Their Attitude and Anxiety about Teaching
Fred L. Pigge and Ronald N. Marso, Bowling Green State University
Volume 7, No.2 Spring 1994

Research Alive: All Our Children Learning
Jack Snowman, Southern Illinois University, Carbondale
Volume 7, No.4 Fall 1994

Research Alive: Educational Research Can Inform Educational Practice
Jack Snowman, Southern Illinois University, Carbondale
Volume 7, No.1 Winter 1994

Research Alive: Becoming a Better Teacher
Jack Snowman, Southern Illinois University, Carbondale
Volume 9, No.2 Spring 1996

Responses to The Bell Curve: A Conversation with John Goodlad
Mary R. Sudzina, The University of Dayton
Volume 9, No.1 Winter 1996

The Responsibility of Higher Education In Providing Leadership In The Restructuring And Renewal of Public Schools: An Invited Address to the 1993 MWERA Conference
W. Gregory Gerrick, Ashland University
Volume 7, No.2 Spring 1994

Semi-Partial Correlations: I Don't Need Them, You Can Have Them
Thomas R. Knapp, The Ohio State University
Volume 9, No.4 Fall 1996

Setting An Agenda for Educational Renewal: A Conversation with John Goodlad, University of Washington
Mary R. Sudzina, The University of Dayton
Volume 8, No.2 Spring 1995

Some Issues in Constructing, Managing, and Using Large Qualitative Databases
James V Mead, Michigan State University
Volume 7, No.2 Spring 1994

A statistical critique of Herrnstein & Murray's The Bell Curve
Thomas R. Knapp, The Ohio State University
Volume 9, No.1 Winter 1996

Summarizing the Literature Review with Meta-analysis
Keith McNeil, New Mexico State University
Isadore Newman, University of Akron
Volume 7, No.4 Fall 1994

Tenure and Promotion: Questions to Ask and Strategies for Success
Orpha K. Duell, Wichita State University
Volume 7, No.2 Spring 1994

Through Their Eyes: Teacher Self-Assessment
Ann M. Jones and Peter W. Airasian, Boston College
Volume 9, No.1 Winter 1996

Transition to Graduate Level Elementary Teacher Preparation: A Formative Analysis
Susan Kent, The Ohio State University: Newark
Volume 9, No.2 Spring 1996

The Use of Multiple Regression Models to Determine if Conjoint Analysis Should Be Conducted on Aggregate Data
John W. Fraas, Ashland University
Isadore Newman, The University of Akron
Volume 9, No.4 Fall 1996

Voices in Education, Fall 1994
Marlene Schommer, Wichita State University
Volume 7, No.4 Fall 1994

Voices in Education, Spring 1994
Marlene Schommer, Wichita State University
Volume 7, No.2 Spring 1994

Voices in Education, Spring 1996
Marlene Schommer, Wichita State University
Volume 9, No.2 Spring 1996

Voices in Education, Winter 1994
Gregory J. Marchant, Ball State University
Marlene Schommer, Wichita State University
Volume 7, No.1 Winter 1994

Voices in Education, Winter 1996
Marlene Schommer, Wichita State University
Volume 9, No.1 Winter 1996

Voices in Education: On Authentic Assessment, Spring 1995
Marlene Schommer, Wichita State University
Volume 8, No.2 Spring 1995

What is "Heritability" and What is it Not?
Lisabeth F. DiLalla and David L. DiLalla, Southern Illinois University
Volume 9, No.1 Winter 1996

Working Toward Foresight and Follow-through
Lyn Corno, Teachers College, Columbia University
Volume 8, No.1 Winter 1995

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Volume 10, No. 1 Winter 1997

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University of Wisconsin - Whitewater

997

On The Cover

On April 21, 1868 Wisconsin's second Normal School opened its door to its first class of 39 students and nine faculty members. Today, the University of Wisconsin-Whitewater is a premier comprehensive regional university which serves 10,500 students with 43 undergraduate and 13 master's degrees programs.

A member of the 26-campus University of Wisconsin System, UW-Whitewater is committed to its goal of "Excellence for the 21st Century" through its first and foremost priority of quality teaching. For three consecutive years U.S. News and World Report has ranked UW-Whitewater in the first tier of Midwestern colleges and universities and most recently described it as a "Best Value" for students in its region.

The College of Education, ranking second in Wisconsin in the number of education graduates per year and with 13,528 current education alumni, prepares students for licensure in over 60 areas and is accredited by the National Council for the Accreditation of Teacher Education (NCATE). Although located in rural Wisconsin, the College is within short driving distances of metropolitan areas. It is recognized for collaborative programs with urban schools, including an early field experience in Milwaukee, the University/Project STREAM* Partnership (*Support, Training, and Resources for Educating Able Minorities), and the regular education/special education Co-Teaching Program in Janesville. The College is also home to the Wisconsin Instructional Technology Resource Center, the exemplary Minority Teacher Preparation Program, and Project Assist for learning disabled university students. The College's business education program and mentor program for beginning teachers are the oldest of their kind in the United States. Reflecting a commitment to preparing teachers as facilitators of learning for all children, admission to the College now emphasizes previous experience with children and with diverse populations, in addition to academic performance.

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Three copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than two months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 10, No. 1 Winter 1997 ISSN 1056-3997

Effectiveness Testing Practices
Ronald N. Marso and Fred L. Pigge, Bowling Green State University
2

Educational Reform Through the Implementation of National Standards: A Response
Richard J. Reynolds, Eastern Connecticut State University
11

Invitation for Proposals for 1997 Annual Meeting
17

How Teachers Connect Research and Practice
Mary M. Kennedy, Michigan State University
25

Schedules and Plans and Things You Should Know
Sharon McNeely, MWERA President
30

Conference Highlights
32

Top 10 Issues Facing Teacher Education
Gregory J. Marchant, Ball State University with Gary Griffin, University of Arizona
34

Fulfilling Its Promise, a Content Analysis of 20 Years of Research at MWERA
Thomas Andre, Iowa State University
37

Voices from the Past
Deborah L. Bainer & Christine S. Halon, Ohio State University, Mansfield
38

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Effectiveness Testing Practices

Educators' Perceptions of the Effectiveness of Their Schools' Standardized Testing Practices

Ronald N. Marso and Fred L. Pigge
Bowling Green State University

Abstract

This study was designed to collect and then to compare teachers', principals', supervisors', and testing directors' (N=484) ratings of the effectiveness of selected standardized testing program management practices in their schools. It was found that these educators, who were selected for being knowledgeable about their testing programs, rated their schools' performance in standardized testing higher than in meeting other district responsibilities. The highest rated testing practices were use of quality tests and materials, maintenance of pupil records, and use of understandable scores and reports. The lowest rated testing practices were the use of test results to evaluate instruction, availability of written policies, and use of publisher instructional guides accompanying achievement batteries. Comparatively, educators assigned to secondary schools tended to rate the testing practices lower than did their elementary school cohorts; just the ratings of the teachers differed significantly among the various job assignment groups; and the job assignment groups provided similar relative ratings of the testing practices with most Spearman Rho coefficients being +.73 or higher.

Educators generally do not have a high regard for standardized testing despite the increased use of these tests in recent school reform efforts (Haney & Madaus, 1989). For example, many classroom teachers appear to have an unfavorable to indifferent attitude toward standardized testing (Borg, Worthen, & Valcarce, 1986), and school administrators tend to view standardized testing as being a relatively unimportant administrative function in their schools (Sproull & Zubrow, 1981). Additionally, assessments of the research literature reveal that testing and evaluation practices receive less attention from educational researchers than many other aspects of education (Crooks, 1988).

This less than positive regard for standardized testing is also revealed in what many educators believe about testing. Classroom teachers commonly believe that standardized testing skills are less needed than are other testing skills (Marso & Pigge, 1988); many teachers perceive the primary benefits of their school districts' standardized testing programs accrue not to themselves but to the school administration (Salmon-Cox, 1981); building principals typically do not perceive the need for testing specialists to be involved in the selection of standardized tests (Kinney, Brickell, & Lynn, 1988); and school counselors frequently feel testing services dominate too much of their time (Miller, 1977).

Furthermore, this less than positive attitude of educators toward standardized testing may be having an undesirable impact upon standardized testing practices in the K-12 schools. For example, many teachers report very limited use of the results from standardized testing in their classroom instruction (Linn, 1990), and educational administrators frequently do not convey the results from standardized testing to their teachers (Wood, 1982). Further curtailing the effective use of the results from standardized testing, the results of this testing, if made available, typically are not available to educational staff until six or eight or more weeks after test administration (Hall, Carroll, & Comer, 1988).

Additionally, some researchers have attributed the rather recent movements toward alternate pupil achievement assessments to the belief that existing standardized measures are too narrow in scope and may even have a negative impact upon classroom instruction (Miller & Legg, 1993). Other research findings have suggested that recent pressures in schools to show improved achievement scores have lead to questionable, if not unethical, methods of raising test scores (Nolen, Haladyna, & Haas, 1992). For example, observations of classroom instruction have revealed that external testing programs may substantially reduce time available for instruction and reduce teachers' use of the variety of instructional materials and methods available to them (Smith, 1991). Surveys of teachers reveal the existence of perceived pressures, particularly in lower socio-economic schools, to improve test scores by planning instruction around tests, by increasing time spent on reviewing previously presented content, and by teaching various test-taking strategies (Herman & Golan, 1993). Relatedly, surveys of adolescent pupils indicate that they have become suspicious and cynical about standardized tests and commonly do not respond with positive test-taking strategies when being tested (Paris, Lawton, Turner, & Roth, 1991).

In brief, the existing research literature does not specifically address the effectiveness of K-12 schools' standardized testing practices. This existing research literature has indicated, however, that educators do not hold standardized testing in high regard, that limited management attention is

typically provided for standardized testing activities, that the results of standardized testing may have little impact upon classroom instruction, and that the management of standardized testing practices has received less research attention than many other aspects of education. In light of these research findings and concomitantly the increased use of standardized tests in recent years, it appears prudent that we know more about typical standardized testing practices in the K-12 schools and the effects of these testing practices upon the schooling process (Paris, Lawton, Turner, & Roth, 1991). The present study was designed to identify and then to compare and contrast various educators' perceptions of the effectiveness of 10 researcher selected practices related to the management of their schools' standardized testing programs. More specifically, this study was designed to answer four research questions: 1) To what extent do testing directors, teacher supervisors, building principals, and classroom teachers perceive their schools' standardized testing practices to be effective? 2) Do these various groups of educators differ one from the other in their perceptions of the effectiveness of these practices? 3) Do groups of educators assigned to elementary and secondary grade levels differ one from the other in their perceptions of the effectiveness of these practices? 4) To what extent do educators perceive that their schools' testing practices encourage the use of results from standardized tests in classroom instruction?

Methods and Procedures

The data gathered for this paper were one component of a larger state-wide assessment of the management and operation of standardized group testing programs in the K-12 public schools of Ohio. Each of the 616 nonvocational school districts was contacted regarding their willingness to participate in an extensive investigation of standardized testing practices and of their uses of the results obtained from standardized testing. This inquiry resulted in 171 superintendents indicating a willingness to have their school districts participate in the study. From these 171 school districts, 106 districts were randomly selected using type of administrative organizations (city, county local, and exempted village) of the school districts as strata in the selection process. The number 106 was determined to provide a sampling tolerance for proportions approximately within ±.05 while also providing a correct proportion of school organization types. Of these 106 randomly selected districts, 97 districts (92%) ultimately did participate in the study.

The survey assessment instruments were mailed directly to the participating superintendents who in turn were asked to forward the sealed packets of materials to their districts' designated testing director and to selected teacher supervisors and school principals. The criterion provided to the superintendents for these selections was that they select one of their elementary principals, one of their secondary principals, and one of their teacher supervisors who would be most knowledgeable about and who could best inform the researchers about the practices and procedures of their school districts' standardized group testing program.

The school principals receiving the survey packets from their superintendents, in addition to completing their own assessment of their district's testing practices, were directed to select and forward enclosed survey materials to classroom teachers. The elementary principals were directed to select and to forward designated survey packets to one classroom teacher assigned to grades one through four and to one classroom teacher assigned to grades five or higher. In making these selections, the principals also were directed to choose teachers who were most knowledgeable about and who could best inform the researchers about the practices and procedures associated with their school district's standardized group testing program. The secondary principals were asked to follow these same procedures, but they were asked to select one classroom teacher teaching in the math-science and one teaching in the English-social studies subject areas.

The goals of this subject selection procedure were first, to solicit assessment responses just from those educators knowledgeable about their districts' testing practices and secondly, to insure responses from educators who were representative of the instructional, administrative, grade level, and academic subject diversities found in the K-12 schools. The adoption of these sampling goals was deemed necessary because of the variety of instructional and administrative responsibilities of educational personnel within school districts. Furthermore, variations in standardized test scheduling frequencies and practices in the use of the results of this testing from school district to school district result in considerable diversity in the extent of experiences a particular educator might have with his/her school's standardized testing program. For example, as a consequence of test scheduling decisions, standardized achievement tests and accompanying scholastic aptitude tests might not be scheduled in third, fifth, seventh, and tenth grades in a particular school district over a period of years and, due to school policy, the results of such testing may or may not follow pupils into the next grade. Consequently, teachers at these grade levels in this district may have few direct or even indirect experiences with their school's standardized testing program, whereas their cohorts assigned to other grades may have frequent and direct involvement with their school's standardized testing program.

The subject selection and contact procedures resulted in the return of usable survey assessment forms from 82 testing directors, 155 principals, 47 supervisors of teachers, and 200 classroom teachers. Just those individuals designated as testing directors by their superintendent and who, themselves, acknowledged that title were included in the testing directors group. Each of the participating 97 districts reported having a testing director but some of those individuals did not, themselves, acknowledge that designation and others chose not to participate, resulting in 82 sur-

1001

veys (85%) completed by the testing directors. A check of school district size indicated that size in itself did not influence whether or not a testing director participated in the study (Marso & Pigge, 1990). Also, just those teacher supervisors employed by selected school districts were included in the supervisors group. Several school superintendents reported either that no formal teacher supervisor positions existed in their district or that teacher supervisory services were provided through their county offices of education.

The respondents were employed in schools organized by city district (42%), local county district (44%), and exempted village district (14%), in schools located in geographic settings described as rural (37%), suburban (57%), and urban (6%), and in small schools (11% with fewer than 1,000 pupils), moderately sized schools (34% with 1,000 to 2,000 pupils), moderately large schools (34% with 2,001 to 4,000 pupils), and large schools (21% with more than 4,000 pupils). These proportions of respondents representing different types of school settings were judged to be approximately similar to the composition of all such schools as reported in the Ohio Education Directory.

The focus of the present report is upon these educators' responses to 10 survey items related to their school district's practices associated with the management of standardized testing. They responded to each of the 10 testing practices by rating the "relative effectiveness" of their school district's testing practices or procedures during the past year or two. The reference to this time period was provided to create a common time period for the ratings and to avoid consideration of proposed, but yet to be implemented, state-mandated high school proficiency testing in the schools. The data collection for this study was completed during spring term of 1989 prior to the initiation of state-mandated standardized testing programs; therefore, the directions to the respondents as to which standardized tests to consider in their ratings were not necessary. Previous surveys of the public schools in Ohio had indicated that group standardized testing primarily consisted of the scheduling of reading achievement, achievement batteries, and scholastic aptitude tests in the elementary schools and of interest inventories, multiaptitude tests, and very limited use of subject area achievement tests in the secondary schools.

In addition to the time reference, the educators also were provided with a second common rating reference. They were directed to rate their schools' effectiveness in performing the 10 testing practices compared to their schools' overall performance in meeting responsibilities as educational institutions. It was assumed that most respondents would lack a common comparative performance reference across school districts but that they would possess knowledge of the overall performance of their own schools. It was determined, therefore, that the overall district performance reference point would provide much more meaningful ratings than would allowing the respondents to bring to the rating task whatever unspecified reference point that occurred to them at that moment.

A five-point scale with narrative descriptions at each scale point and with an accompanying "DK" response option, defined as "I really do not know," was provided with each of the 10 testing practices items. The "I really do not know" response option was added to discourage ratings of testing practices about which the respondents might feel uninformed. This was deemed to be consistent with the researchers' goal of seeking ratings just from educators knowledgeable of their schools' testing practices. This scale ranged from "we perform well below our average" (1) to "we excel" (5).

Three sets of statistical analyses of the collected data were completed. One and two-way ANOVA procedures were used to identify significant rating mean differences among the teacher, principal, supervisor, and test director respondent groups and among these groups when classified by secondary or elementary school assignments. The job assignment and grade level interactions were also tested and discussed. An alpha level of .05 was selected for the ANOVA's while a .10 level was selected for the pair-wise post-hoc Scheffe tests. This pair-wise procedure readily handles unequal n's and is the most conservative of these procedures to the extent that Scheffe recommends use of the .10 level (Hinkes, Wiersma, & Jurs, 1994). These ANOVA procedures were completed on the data derived from respondent ratings of each of the 10 testing practices. In addition, Spearman Rho correlations were completed between the various groups of educators' ranked rating means for the selected testing practices to ascertain the extent of agreement among the educators as to which of their schools' testing practices were rated to be more or less effective.

Results

Each of the four groups of educators, testing directors, classroom teachers, teacher supervisors, and principals rated their school's performance of the selected 10 testing practices about average or somewhat higher (3 or higher on the five-point scale) compared to the performance of their schools in meeting their overall responsibilities as educational institutions. Only when the teachers, principals, and supervisors were classified by elementary and secondary school assignments were any rating means found below the "about average performance for us" or '3' level. Just two of the rating means of the secondary teachers and one of the rating means of the secondary supervisors were below this average, whereas none of the mean ratings of the secondary principals, the testing directors, and the elementary level educators were below the "about average" or '3' level.

The testing practices rated more effective by the educators were management of pupil records, use of quality tests and materials, selection and administration of tests, and use of understandable scores and reports (items 8, 3, 1, and 5, respectively). Practices rated less effective were use of the results of achievement battery testing to evaluate district classroom instruction, provision of instructional guides ac-

companying achievement batteries to aid teachers in relating test results to instruction, availability of school policy regarding access/dissemination/storage of test results, and prompt availability of test results after testing (items 10, 6, 7, and 4, respectively) as can be noted in Table 1.

The one-way ANOVA procedures revealed group mean differences in ratings of four of the 10 testing management practices between the directors, teachers, supervisors, and principals; for seven of the 10 practices between the directors and just the elementary teachers, supervisors, and principals; and for seven of the 10 practices between the directors and just the secondary teachers, supervisors, and principals. These differences, however, were limited to differences just between ratings of the teachers and one or more of the other three groups of educators. In other words, no statistically significant differences were identified between the rating means for any of the possible mean pairs of the administrator groups of principals, directors, and supervisors.

Because the ratings of the directors did not differ significantly from those of the principals or the supervisors for any comparison, the one-way ANOVA tables are not presented. These tables may be obtained by contacting the authors. The two-way ANOVA procedures present essentially the same information with more brevity (see Table 1). The highlights of the significant rating differences identified in the one-way procedures are presented, however, in the next several paragraphs.

Table 1

Analysis of Teachers', Principals', and Supervisors' Ratings of the Effectiveness of Testing Practices When Classified by Elementary and Secondary Grade Levels

	Practices or Procedures	Means (N's) Job Assignments Teach	Princ	Supr[b]	F	p	Means (N's) Grade Level Elem.	Sec.[c]	F	p	Job x Grade F	p
1.	Test selection and	(190)	(138)	(29)			(205)	(152)				
	administration	3.55	3.91	3.97	7.19	.00	3.71	3.73	.01	.94	.37	.69
		A[a]	B	B			A	A				
2.	Test scheduling	(184)	(140)	(28)			(200)	(152)				
	to aid decisions	3.38	3.67	3.68	5.68	.00	3.52	3.61	1.27	.26	.74	.48
		A	A	A			A	A				
3.	Quality tests,	(190)	(139)	(29)			(206)	(152)				
	materials, reports	3.95	4.16	4.17	2.86	.06	4.07	4.03	.02	.89	2.15	.12
		A	A	A			A	A				
4.	Results available	(196)	(139)	(29)			(210)	(154)				
	promptly	3.13	3.47	3.34	4.17	.02	3.22	3.36	.17	.68	1.20	.30
		A	A	A			A	A				
5.	Understandable	(193)	(142)	(26)			(209)	(152)				
	scores, reports	3.74	3.91	3.77	2.37	.10	3.96	3.61	2.53	.11	5.67	.00
		A	A	A			A	B				
6.	Instructional	(191)	(136)	(26)			(205)	(148)				
	guides available	3.23	3.10	3.42	.90	.41	3.55	2.70	5.36	.02	8.75	.00
		A	A	A			A	B				
7.	Written test	(125)	(130)	(27)			(162)	(120)				
	records policies	3.38	3.14	3.63	1.71	.18	3.35	3.22	.21	.65	4.61	.01
		A	A	A			A	A				
8.	Student permanent	(195)	(141)	(26)			(205	(157)				
	records	4.26	4.30	4.15	.31	.73	4.38	4.11	2.36	.13	.55	.58
		A	A	A			A	A				
9.	'CR' available	(146)	(125)	(23)			(173)	(121)				
	data	3.85	3.66	3.70	.29	.75	3.84	3.64	.05	.83	3.95	.02
		A	A	A			A	A				
10.	Evaluate class	(145)	(133)	(25)			(168)	(135)				
	instruction	3.08	3.29	3.00	1.66	.19	3.29	3.01	4.09	.04	2.46	.09
		A	A	A			A	B				

[a] Unique letters indicate significant mean differences, similar letters indicate nonsignificant mean differences, Scheffe alpha = .10. Ns varied as respondents were provided with the option of "I really do not know" in rating each practice.

[b] Teacher-principal Rho = .77, teacher-supervisor Rho = .88, and principal-supervisor Rho = .94.

[c] Rho between ranks of elementary and secondary personnel rating means = .77.

1003

The one-way ANOVA procedures indicated that elementary and secondary teachers as a collective group rated test selection and administration (item 1) significantly lower than did the combined groups of elementary and secondary supervisors, principals, and directors. These teachers also rated test scheduling at times to aid decision-making and prompt return of testing results (items 2 and 4) lower than did the supervisors and directors. In contrast, the teachers rated the provision of criterion-referenced data from achievement batteries (item 9) higher than did the testing directors. When these means were rank ordered, the directors' ratings were found to be highly related to those of the principals (Rho = +.93) and the supervisors (Rho = +.93), but somewhat less so with the teachers (Rho = +.73).

The one-way ANOVA and Scheffe procedures just for the directors and the elementary educators indicated that the elementary teachers' ratings were lower than the directors' ratings of practices related to test selection-administration (M's = 3.57 & 4.01), test scheduling (M's = 3.40 & 3.90), and prompt return of test results (M's = 3.13 & 3.70), items 1, 2, and 4, respectively. In contrast, the elementary teachers' ratings were higher than the directors' ratings for the provision of criterion-referenced data (M's = 4.05 & 3.29) and the handling of pupil permanent records (M's = 4.41 & 4.03), items 9 and 8, and the elementary teachers' ratings were higher than the directors' and elementary principals' ratings of the provision of instructional guides (M's = 3.79, 3.20, & 3.23, respectively) and the availability of written school policies regarding pupil records (M's = 3.65, 3.10, & 3.00, respectively), items 6 and 7. The Spearman Rhos between the rank ordered rating means of the testing directors and the three groups of elementary educators indicate that the elementary teachers perceived their schools' relative performance of the various testing practices somewhat differently than the other educators but that considerable agreement existed among the other groups of educators. Positive Rhos of +.49, +.55, and +.60 were obtained between the elementary teachers and directors, elementary principals, and elementary supervisors, respectively; whereas Rhos between the elementary principals and supervisors, directors and elementary supervisors, and directors and principals were +.80, +.85, and +.93, respectively.

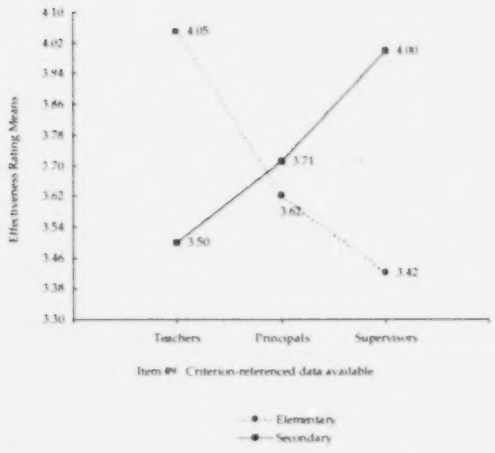
The one-way ANOVA procedures just for the directors and the secondary educators indicated that the secondary teachers' ratings were lower than the secondary principals' ratings of the use of understandable scores and reports and of the use of achievement batteries to evaluate district instruction (items 5 and 10). The secondary teachers' ratings were lower than both the directors' and secondary principals' rating of the practices of test selection-administration (M's = 3.51, 4.01, & 3.97, respectively), test scheduling (M's = 3.36, 3.90, & 3.87, respectively), test and materials quality (M's = 3.81, 4.17, & 4.25, respectively), and promptness of test results (M's = 3.14, 3.70, & 3.67, respectively) items 1, 2, 3, and 4, respectively. Additionally, the ratings of the secondary teachers (M = 2.42) were lower than both the directors' (M = 3.20) and supervisors' ratings (M = 2.92) for the provision of instructional guides to aid instruction (item 6). Unlike the elementary teachers' ratings, all of these ratings of the secondary teachers were lower than those of the other noted groups. The secondary teachers, however, perceived the relative effectiveness levels of their schools' performance of the selected testing practices more similar to the other secondary education groups than did their elementary teacher cohorts. The Spearman Rhos between the rating means of the secondary teachers and directors, secondary teachers and principals, and secondary teachers and supervisors were +.87, +.94, and +.92, respectively. The related Rhos among the secondary pairs of directors and principals, directors and supervisors, and principals and supervisors were +.95, +.79, and +.84, respectively.

The two-way ANOVA procedures, completed without the directors but with the elementary-secondary assignment classification of the remaining groups of educators, revealed that the elementary school educators (combined principals, supervisors and teachers) rated higher the provision of instructional guides for instruction and use of scores for evaluation of district instruction (items 6 and 10) than did their secondary cohorts (see Table 1). The job assignment main effect comparisons identified significant differences in the ratings of the teachers, principals, and supervisors for test selection and administration (item #1), test scheduling (item #2), and making test results available promptly (item #4). In each case the rating means of the teachers were the lowest of the three groups; however, the Scheffe pair-comparisons identified a difference among the rating means just for the test selection and administration practice.

These two-way ANOVA procedures also revealed significant job-group and grade-level interactions among the rating means for four items. For each of these four testing practices, understandable scores and reports, availability of instructional guides, presence of school policies, and provision of criterion-referenced test data, the secondary teachers' ratings (items 5, 6, 7, and 9, respectively) were sharply lower than those of the elementary teachers. Additionally, the ratings of the elementary supervisors and secondary supervisors differed sharply on the effectiveness of the provision of criterion-referenced analysis from achievement batteries (item #9). Figure 1, the graph of the rating means for the provision of criterion-referenced data, illustrates the elementary and secondary teachers' differences common to

items 5, 6, 7, and 9 and the elementary and secondary supervisors' difference unique to item #9. Rather surprisingly, the elementary supervisors, who as instructional leaders might be expected to be strong advocates of the provision of criterion-referenced data to link test results to instructional activities, rated this practice much lower than did the secondary supervisors and also much lower than did the elementary teachers. As previously noted, for most other practices there was considerable agreement between the ratings of the elementary supervisors and elementary teachers. None of the other ratings of the elementary supervisors and elementary teachers differed significantly, and the Rho between their ranked rating means was +.93.

Figure 1



Summary and Discussion

Somewhat contrary to what might be expected from previous studies revealing that many educators have a less than positive attitude toward standardized testing (Haney & Madaus, 1989) and that school administrators view standardized testing as a relatively unimportant management function (Sproull & Zubrow, 1981), these classroom teachers, teacher supervisors, school principals, and testing directors rated the effectiveness of their schools' performance of the 10 selected standardized testing program management practices as being average or above average in comparison to their schools' performance in meeting their overall responsibilities as educational institutions. This contrast between present and prior findings may in part result from the selection of the educators for this study; for at each distribution level of the survey materials, superintendents and principals, the distributors were directed to forward the materials to individuals most knowledgeable about and who could best inform the researchers about the standardized testing programs in their schools. Additionally, the respondents were provided with, and many used, a "do not know" category on the rating scale. Consequently, the findings from this study are likely to more accurately reflect the schools' performance of these tasks, but the findings may be less representative of typical educators' perceptions of the effectiveness of their schools' testing practices. This procedure of soliciting just informed input about specific testing practices was, however, consistent with the researchers' goal of assessing the level of public schools' effectiveness in actually operating standardized group testing programs. Assessments of specific testing management practices by knowledgeable educators have received little attention in the existing research literature. In contrast, the investigation of typical educators' attitudes toward testing has received relatively more research attention (Marso & Pigge, 1993).

The high relative consistency between the ratings (Rho's in .90's) of the principals, supervisors, and testing directors, adds further confidence to the interpretation that these findings may accurately reflect the perceptions of educators knowledgeable of testing program management practices. Those differences found between the magnitudes of the ratings of the teachers and the three administrative groups may reflect differences between their job experiences and responsibilities. For example, the ratings of the teacher supervisors, whose responsibilities are more closely linked to facilitating classroom instruction as compared to principals and testing directors, were somewhat more similar in a relative sense to those of the classroom teachers (Rho = +.88) than the principals (Rho = +.77) and the testing directors (Rho = +.73). Furthermore, just two testing management practices revealed statistically significant differences between the ratings of the teachers and supervisors; whereas eight practices revealed differences between the ratings of teachers and ratings either of the principals or the directors. There also was less consistency found between the ratings of the elementary teachers and the ratings of the testing directors (Rho = +.49) than was found between the ratings of the secondary teachers and the testing directors (Rho = +.87). This discrepancy might reflect the more similar background of the secondary teachers and the testing directors as compared with the backgrounds of the elementary teachers and the testing directors. Most of the testing directors either had prior assignments in or concurrently held assignments in secondary schools.

The secondary teachers rated the effectiveness of seven of their schools' testing practices lower than did one or more of the other three groups of secondary educators. In contrast, the elementary teachers rated three practices lower and four higher than did one or more of the other three groups of

1005

elementary educators. The ratings of the testing directors, supervisors, and the principals did not differ significantly one from the other for any of the 10 testing practices, and the Rhos between the ranked rating means of these groups all exceeded +.90. Also, few differences were identified between the respondents when grouped as secondary and elementary educators, and when these differences were identified they resulted from differences between the ratings of the elementary and secondary teachers with but one exception.

The differences found between the ratings of the elementary and secondary teachers may simply reflect the differences in the focus of standardized testing in the elementary as compared to the secondary schools. In the elementary schools, the focus of standardized testing is upon the guidance of pupil instruction with reading tests, achievement batteries, and scholastic aptitude tests being most frequently administered. In the secondary schools, achievement batteries and general aptitude tests are less frequently scheduled as typically the focus of standardized testing has changed from instruction to career selection with the administration of multiaptitude batteries, vocational interest inventories, and college admission tests (Mehrens & Lehmann, 1987). Consequently then, one might expect secondary teachers to perceive standardized testing programs to be of less use to them than do their elementary school cohorts as was the case in the present study.

Similarly, the statistical interactions identified between the job assignment and the job grade level classification in the present study might also be explained by differences in the focus of the standardized testing programs in the secondary and elementary schools. For example, the nature of score reports, the practices related to the storage of cumulative pupil records, the availability of instructional remediation guides, and the provision of criterion-referenced data after achievement battery testing are all practices likely to vary considerably between elementary and secondary schools. The elementary grade aptitude and achievement test reports tend to be less complex than the secondary school vocational aptitude and interest test reports; remedial instructional guides accompanying achievement batteries are less commonly used in secondary schools than in elementary schools; cumulative pupil records typically are stored within self-contained elementary classrooms but typically are stored in central locations in secondary schools; and typically criterion-referenced data are available just for achievement batteries which are more frequently administered in elementary schools than in secondary schools.

The pattern of high and low rating means for the 10 testing practices noted in the present study suggests possible implications for the management of standardized testing programs. Certainly, first and foremost, the ratings of these educators suggest that standardized testing programs are perceived to be functioning effectively as compared to the overall performance of the schools in meeting their overall goals as educational institutions. Each of the groups of educators in the present study appeared to be satisfied with the quality of the tests, testing materials, report forms, and the management of pupil records. On the other hand, these educators appeared to be less positive about the effectiveness of the use of achievement battery scores in part to evaluate classroom instruction. The teachers appeared to be less satisfied with test selection, test administration and scheduling, and the prompt availability of the results from testing than were the other three groups of educators. Conversely, the elementary school teachers appeared to be more satisfied with the effectiveness of the guides for remedial instruction and of criterion-referenced data accompanying achievement batteries than were the other three groups of educators.

Practicing testing directors might prudently build upon the present satisfactions of their administrative cohorts but strive to enhance interactions with classroom teachers related to the operation of their testing programs. In particular, it appears that these testing directors along with the other educational administrators ought to work more closely with teachers in the selection, administration, and scheduling of tests; in the prompt dissemination of test results; in preparing written policies for school testing programs; and in making available to teachers remedial instructional guides accompanying achievement batteries to better enhance classroom instruction. The differences in typical standardized testing in the elementary and secondary schools and the present findings suggest that these collaborative efforts might be more essential in the elementary as compared to the secondary schools. Lastly, it would seem that testing directors should investigate the major discrepancy that appears to exist between elementary teachers' and elementary teacher supervisors' perceptions of the effectiveness of criterion-referenced data in linking testing results with classroom instructional activities. Measurement specialists typically expect those educators and administrators most directly responsible for classroom instruction, such as elementary teacher supervisors, to be the strongest advocates of the provision of criterion-referenced data to support classroom instruction (Mehrens & Lehmann, 1987), but it appeared that this may not have been true of the elementary supervisors in the present study.

1006

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Appendix: Rating Form

SECTION IV. School Standardized Group Testing Program Practices or Procedures.

Please rate each of the following group testing practices or procedures in terms of the relative effectiveness of what happens in your school(s). Please respond to each item the best you can although you may be more or less informed about some of these practices. Please circle your rating of effectiveness using the code below.

	Relative Effectiveness* Response Codes
'1'	We perform well below our average* here
'2'	We perform below our average here
'3'	About average performance for us
'4'	We perform somewhat above average here
'5'	We excel here
'DK'	I really do not know

* Your perception of your school's performance on this practice relative to its overall performance as an educational institution.

Practice or Procedure	Relative Effectiveness					
	LOW				HIGH	(?)
1. Effective test selection/administration/scheduling for standardized testing program (overall)	1	2	3	4	5	DK
2. Tests are scheduled at times to aid decision-making	1	2	3	4	5	DK
3. Quality tests, materials, and reports are used	1	2	3	4	5	DK
4. Results of tests are available promptly to aid use of results	1	2	3	4	5	DK
5. Understandable scores, narrative reports and pupil profiles are used to report performance	1	2	3	4	5	DK
6. Teachers' instructional guides are made available to all teachers to aid instructional use of achievement battery results	1	2	3	4	5	DK
7. Written school policies are available for access/dissemination/storage of test results	1	2	3	4	5	DK
8. Student permanent records are updated periodically (dated information removed, new added, etc.)	1	2	3	4	5	DK
9. Criterion-referenced achievement battery results are provided as well as norm-referenced scores	1	2	3	4	5	DK
10. Achievement battery scores are used in part to evaluate district classroom instruction	1	2	3	4	5	DK

1008

Educational Reform Through the Implementation of National Standards: A Response

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Abstract

At this writing, federal initiatives for education reform seem to be taking their last gasps. There is a question as to whether Goals 2000 will make it to the year 2000. The development of voluntary, national standards has generated considerable debate both as to the desirability of such standards and the enlarged federal role in education. What is killing these initiatives and are they worth saving?

Background

Federal initiatives in education have constitutional, social (including economic) and political implications. These implications concern us as policy makers attempt educational reform based upon the implementation of national standards.

It can be argued that schools already have the resources, flexibility and, indeed, the responsibility to implement the necessary reforms. Why then do we need federal intervention in the reform process? The 1994 Goals Report provides this answer:

> Public dissatisfaction with low levels of student performance, increased global economic competition, and consistently poor showings on international assessments led policy makers to conclude . . . that the United States had been spending too much time merely practicing and had not devoted sufficient time to improving performance. The National Education Goals were created to reverse that trend (Vol. 1, p.12).

It appears that federal reformers are working from an assumption of general public dissatisfaction. They believe that schools have gravitated toward a minimum competency curriculum and that most state standards, where they exist, provide a floor, not a goal, for practice. In this scenario many, if not most, schools are below standard, a situation which the federal reformers view as politically intolerable.

The United States has never had explicit, national content or performance goals, thus the establishment of standards represents a profound shift in educational practice. Not until recently have individual states set challenging, absolute standards for their student populations. While the absence of common standards has not prevented some schools from setting their own ambitious goals, many schools set their sights too low. In the absence of common, specified, demanding content standards and high expectations for students, schools have gravitated toward a minimum competency curriculum. This trend has been so marked that some observers have suggested that what we now have is a 'de facto' national curriculum of basic skills.

The notion that standards are integral to educational reform has been at the forefront of the educational and political debate since the publication, in 1983, of *A Nation at Risk: The Imperative for Educational Reform*. The document recommended that "schools, colleges and universities adopt more rigorous and measurable standards" (p. 27). This popular, and in some respects seminal, document set a national agenda for education. Its major thrust was that all children can learn; schools must have high academic standards; for a school to achieve its goals, texts, tests and curricula must be tightly coupled; test scores will ensure that schools and teachers are held accountable (Cuban, 1993, p. 25).

President Bush gathered the state governors at the Education Summit in Charlottesville, Virginia in 1989 where they embraced the concept of national goals and performance measurement and called for a greater sense of direction, combined with competitiveness, accountability and results in education. These themes were contained in the Bill, *America 2000: Excellence in Education Act* sent to the Congress in May, 1991 (Mulcahy, 1995).

A Nation at Risk and America 2000 were the result of a consensus forged among national political and business leaders. Players included the National Governors' Association (NGA), the Business Coalition for Education (an umbrella organization for corporate America), and the National Council on Educational Standards and Testing (NCEST). They concluded that tougher and better schooling would boost a sagging economy and that a fragmented and failing education system needed centralized guidance as well as incentives and penalties to motivate students and teachers to work harder.

In 1993 President Clinton's Bill, *Goals 2000: Educate America Act* may have softened the emphasis on accountability and competitiveness, but the commitment to standards remained (Mulcahy, 1995). The Act gave educational standards a statutory institutional existence in the form of the National Educational Standards and Improvement Council, NESIC.

Driven by the logic behind the standards movement educators and policy makers have sought to give renewed direc-

tion to the very fragmented system we know as public education. Standards may be a start in the right direction, but they leave us pondering. There are unanswered questions, uncharted directions and uncharacteristic emphases that require thought and processing. Are national standards ever feasible in a nation as diverse as the United States and in an education system with a long history of local control? Are standards simply a way to blame the teacher and the learner for the failure of the system? Are American schools failing because teachers and students aren't trying hard enough? Have we entirely given up the Deweyan notion of making the school fit the learner? What will these new standards do to disadvantaged school populations who are just now beginning to show marginal gains in educational achievement?

What Standards are We Speaking of?

The Reagan and Bush plans involved a performance-based, accountability model with clearly defined outcomes for schools, i.e. standards for content, performance, and teaching. Clearly, the purpose was quality and excellence. The Clinton model expanded the concept of accountability to include delivery standards which provide assurance that each student has a fair opportunity to acquire the knowledge and skills set out in the standards. The addition of this element shifts the focus and ensures that inputs as well as outcomes are accounted for. Delivery standards explicitly introduce equity into the equation.

It is important to account for both inputs and outcomes in any measure of educational achievement. Almost a century ago John Dewey told us that what the learner brings to the learning process is as important as any content that we may wish to instill. The affective and social objectives of education are every bit as important as the curriculum content. A century of research has borne out the truth of Dewey's assertions. Any measure of educational outcomes judged against national norms must, realistically, account for local differences (inputs) as they impact opportunity to learn.

The Pros and Cons

Typically, supporting arguments equate the international standing of the United States and competitiveness of its economy with the optimal development of the nation's human capital. Supporters argue that national educational standards will ensure the nation's preeminent position in trade, technology, and world affairs.

Proponents hold that many states have insufficient resources, both human and fiscal, to establish their own standards and assessment systems. They maintain that the establishment of challenging national standards will encourage states and school districts to raise educational expectations; that standards will help improve both the quality of schools and teacher professional development by providing a clear, common set of challenging goals; and that national standards, applicable to all children, will help to provide the impetus for equalizing equality of educational opportunity across the nation (Smith et al. 1994, p.18).

Contesting the position are an equally explicit set of arguments. The collective national experience with centrally established standards, in education and in other sectors, has not been promising. Standards, generally, are "minimum standards" that serve to drag down the entire system. If such were to be the case with education standards, the entire nation would suffer. Relatedly, the establishment of national standards would draw attention away from the many, very positive state and local initiatives now underway. Opponents worry that if challenging national standards are established but the enabling strategies and resources are not available, the result will be a disservice to students. Other arguments depict national standards as too narrow and restrictive. Critics posit that national standards will lead to a national curriculum, inhibiting local and state creativity and initiative. Finally, the assertion that the great cultural, ethnic and regional diversity of the nation makes it unlikely that a common set of educational standards would enjoy widespread acceptance.

Are Standards the Answer?

The national standards approach to educational reform involves both misconceptions and untested assumptions. Built into the Reagan-Bush-Clinton reforms is the assumption that rigorous standards will eliminate a crisis in education and guarantee the achievement of national goals. No such guarantees exist. What is guaranteed is centralized power and control over what will be taught and who will teach in the nation's schools.

The terms "quality" and "standards" are borrowed from industry where they, in fact, denote control. In the context of education, a unified system of quality assurance can be construed as controlling who will teach, what they will teach, and how this content will be taught. In this industrial metaphor for education the curriculum consists of content fields that have standard, measurable outcomes. Surely, education is not mass production; teachers are not in the business of administering uniform treatments and delivering a standardized product!

The view of the new federal reformers may be too narrow. To offer standards as the basis of educational reform may be to miss the point. Are American schools failing because some students and teachers are not working hard enough; because they cannot meet proscribed standards? Do schools, operating in a pluralistic society, have the right (never mind the ability) to create a homogeneous product, while ignoring differences in the cultural and life experiences of learners? Would the new age federal reformers have us revert to strategies rejected long ago by John Dewey, where the learners have to meet the standards set by the school or be labeled laggards? Kenneth Goodman (1994) who takes an uncompromising stand against national standards, claims

1016

that the movement is an attempt to centralize power and privatize education.

> The standards movement promises the political power brokers that by controlling outcomes they can control schools while appearing to support local control and they can avoid spending money to deal with the real needs of education. With national standards in place, the laws of the marketplace can be introduced encouraging profit makers to compete with public schools and judging all in terms of their ability to meet standards (p. 39)

In the Face of History

National standards become a question of feasibility in a nation as diverse as the United States and an education system with a long history of local control. The tradition of local control, dating back to the colonial era, has generally confined arguments about what schools should teach, to localities. Populations tended to be fairly homogeneous and participants in such discussions often shared similar beliefs and traditions. As O'Day and Smith (1993) point out, "(e)ven where school populations reflected greater cultural, linguistic, or religious diversity the political disenfranchisement of large groups often resulted in decisions (about how best to educate) being made by fairly homogeneous groups of leaders" (p.293).

In the last half century the situation has changed significantly. As the demand has broadened for social, political and economic equality among groups and as populations within school jurisdictions have become more diverse and educationally aware, debate over curricular content has become more intense. In these newly aware constituencies, arguments linking curriculum and educational standards to issues of political power or cultural legitimacy have erupted, periodically, along racial, religious or ethnic lines (O'Day & Smith, 1993).

Politics and National Standards

The U.S. political system was deliberately designed to frustrate central power. Institutional checks and balances and shared authority within the federal system were constructed to thwart powerful, centrally coordinated action. In education, authority was divided among local, state, and federal governments with the latter having only marginal influence. The very size and diversity of the country cemented the system into place.

State government is the constitutional center of US education. To this point in our history, state and local education authorities have been only modestly constrained by federal initiatives usually stemming from categorical aid or Supreme Court decisions. President Bush, seeking a way around this constitutional obstacle, brought together the state governors at the Charlottesville Summit to forge an agreement. To ensure that the agreed-upon standards remained constitutional, they were deemed voluntary; no school could be required to adopt standards established by the federal government.

Federally instituted standards raise fundamental questions of educational politics and competing public values, more especially in terms of traditional governance arrangements and multiple control. Implicit in the new standards is a critique of the traditional mechanisms that have produced the present fragmented and incoherent standards. These reforms rest, at least in part, on a new balance of power including a pronounced shift, from local and state, to national control. The creation of new consensus building organizations such as the National Education Goals Panel (NEGP), the National Board for Professional Teaching Standards (NBPTS) and the National Educational Standards and Improvement Council (NESIC) together with a reliance on federal strategies that promote cooperation between the states is bound to effect a power shift from the state capitols to Washington.

There are many who believe that the present decentralized structure is the essence of American education. Conversely, among the reformers are those who admire countries with strong, centralized ministries of education. The differences are rooted deep in the political culture. There is within the nation a deep suspicion of government coupled with a strong democratic desire for popular participation in pursuit of communal goals. Yet, it appears that the nation is ready to recognize that a lack of national standards has cost us dearly; that national systemic reform, in the guise of national standards, is the answer.

The political dynamic of standard setting is a puzzle. To produce the consensus necessary for national standards, it appears that we must change the present governance arrangements. However, experience has taught us that the democratic processes that produce these new arrangements will likely yield a whole new bureaucracy that, inevitably, will distort and perhaps frustrate the best intentions of the reformers. Ironically, the reformers who decry the current lack of structure may find structure their undoing.

A National Curriculum?

Given the above political considerations how far removed are we from a national curriculum? Mulcahy (1995) reasons that it is only through content that content standards can be manifest. And it will be the acquisition of this content that will signal that content standard has been met. Therefore, to specify content standards is to specify content and specified content sounds suspiciously like national curriculum.

While standards may be voluntary, schools that prepare their students to meet such standards may give them an edge when it comes to college entrance and employment. In these circumstances, voluntary national standards may readily become 'de facto' national curriculum.

There are still other considerations that raise doubts. The national goals, as currently constituted, identify nine subject areas - math, science, English, the arts, foreign lan-

guages, history, geography, civics and economics. Originally fewer were presented and one could argue that others could be added. This raises the question as to what knowledge and which performance skills ought to be included and excluded. Why these subject areas and not others? The current legislation does not offer an explanation.

There is an assumption in the Bush and Clinton legislation that what a student should know and be able to do is delimited by the traditional disciplines. It could be argued that conventional academic knowledge excludes from the curriculum much of the non-academic knowledge as well as the attitudes and skills that lead to personal and group fulfillment. Community and workplace skills that build harmony, tolerance, responsibility and cooperation are not necessarily inherent in conventional academic disciplines (Mulcahy, 1995). There remain large segments of the population of school professionals and administrators who are uncomfortable with the whole concept of a national curriculum.

Control and Resources

Both control and resources are at stake in any restructuring of educational governance. Proponents of local control argue that meaningful standards will result from adaptation to local conditions coupled with external support and assistance. The new breed of systemic reformers has a much more business like approach. They view education as public investment. In this scenario, standards serve as a starting point for a complex political process aimed at securing greater resources for education in return for greater accountability. Standards are the political basis for an exchange between public policy makers who control resources and educators who control instruction.

What if national standards are enacted without the provision of necessary resources? Current inequalities in the provision of resources in the nation's schools brings this scenario well within the bounds of possibility. The specter of unfunded mandates coupled with gross inequalities in the provision of resources will lead to resistance, if not rebellion, on the part of teachers.

When high standards are proposed, they are likely to be followed by educator requests for more resources. Policy makers are wary of initiating such a cycle. In the present tight economy, the battle for higher education standards is difficult to initiate and even more difficult to win. Voters are lukewarm and policy makers have reason to be cautious.

Reform and Educational Opportunity

The American school, quintessentially a white, middle class institution must, increasingly, accommodate students from outside this cultural mainstream. These changing demographics point to a sharpening and intensifying of cultural conflicts. Nowhere will this become more apparent than in the contested terrain of school curriculum. Critics fear that national content standards will not reflect the culture of students from minority backgrounds.

How will minority, low-income and limited-English-proficiency students fare under new national standards? Proponents of national standards answer that well designed, systemic reform intended to improve the overall quality of schooling benefits the entire school population; and that "a rising tide lifts all boats". Standards are a powerful new policy instrument designed to promote and sustain equality of educational opportunity. Minority advocates worry that, just as minority students are beginning to succeed in terms of the standards and tests currently in place, elites are changing the rules of the game. The fear is that this will replicate the cycle of failure and further embed social stratification. Larry Cuban (July 14, 1993) echoes these concerns in an article written for Education Week.

> With the evidence drawn from big city schools after almost a decade of effective-school programs and tougher state standards and tests, one predictable outcome is that systematic reform will miss the very schools that are most often used to justify the strategy. Thus it is fair to ask Congress: How national can a national strategy be that misses almost half of all schools in the country? (p. 25).

Some advocates for disadvantaged students, frustrated by the failure of 30 years of school finance reform and desegregation in education, hope that national standards will provide the impetus for a new round of court litigation based on substantive equity (Myers, 1994). Those who doubt the value of the present reform movement quote the concerns of poorer, urban school districts which lack the human, fiscal and material resources to achieve higher standards (Darling-Hammond, 1994; Kozol, 1991). We have ample evidence that schools serving low-income, minority students consistently have fewer resources and learning opportunities.

Consensus

Specifying standards can galvanize opposition across the professional, political, and social spectrum. Educators and policy makers are keenly aware of the problems that result when notions of change are not widely shared in the community. As a result, most national standards projects are engaged in a broad review and feedback process to gather diverse input. The hope is that this process will yield a shared vision and a foundation for support and impart legitimacy to the standards (Massell, 1994).

Goals 2000 recognizes the importance of consensus building and speaks of "collaborative efforts . . . that are taking place at all levels of governance and, hopefully, in every community" (1994, Vol. 1, p. 14). More to the point, it is prepared to back the process with federal dollars. It embraces the policy of giving subject matter professional groups a much larger role in shaping the discussion. In December 1995, the National Academy of Sciences released the final version of the

1012

national science standards. Among the diverse groups involved in the delivery of these standards were the National Science Teachers Association, National Science Foundation, US Department of Education, National Aeronautics and Space Administration, and the National Institutes of Health (*Education Week*, Dec. 13, 1995, p. 9).

The present policy may give the subject matter professionals a much larger role in shaping the discussion, yet consensus requires more than agreement among professional groups. The National Council of Teachers of Mathematics, which has lead the way in developing standards, went through a lengthy process of feedback and revision following initial development. Their standards, when published, were accompanied by the caveat that professional standards are to "direct but not determine practice; to guide but not prescribe teaching" and that "no tight implications for practice may be inferred" (Ball, 1992, p. 27).

The polarization of the political system, the power of interest groups and the concomitant access to financial resources makes consensus more necessary, yet more problematic. The achievement of ambitious and challenging standards can be at odds with the objective of broad consensus. Juggling public opinion, professional status, and dollars will provide the creators of the standards with their major challenge.

World Class

The 1991 report of the National Educational Goals Panel (NEGP), in language that was incorporated in Goals 2000, sets forth the criteria that national content standards must be "world class". This requirement emerged out of concern that US students lag behind their counterparts in other countries and the consequent issue of America's declining competitiveness in global markets. Such considerations have strongly motivated school reformers in the 1980's and 90's.

We need to exercise some caution in judging calls for reform based upon our situation relative to other nations. For example the British Education Reform Act of 1990 is sometimes used by reformers as a basis for comparison. This act established national curricula and, although it did leave room for some local input, it is considered to be highly prescriptive. The underlying social values and aspirations which motivated the British legislation may be at odds with the egalitarianism and the social rights agenda which permeates public school education in the United States.

Arguments based upon international comparisons can be of doubtful validity, statistically or otherwise. If, for example, high school exit exams are the basis for comparison, then high school completion rates need to be taken into consideration. Stevenson and Stigler (1992) maintain that school achievement may have more to do with cultural factors than formal standards. They point out that American parents tend to assume that learning is fundamentally a matter of the child's innate ability rather than a child's effort to learn. This widespread attitude is in marked contrast to that of Asian parents who emphasize, to their children, the necessity of applying themselves diligently and who consistently invest their time and resources in supporting their children's efforts. They point to a further cultural limitation in the manner in which the high or low status of teachers positively or negatively affects the quality of the talent pool from which future teachers are drawn.

Standards: A Narrow View of Education

Are national standards simply a code name for outcomes based education? The standards movement offers political and business power brokers the prospects of control of schools through the control of outcomes. This outcomes based model leaves out the learner. Instead of beginning where the learner is, national standards map out a preordained path for learners as determined by some national committee of experts.

The notion of a standardized product is inappropriate in education. The Common School model of education was designed to empower us to play an informed role as citizens. It was envisioned as the forum where we learned the social skills and strategies necessary to become participants in a democratic society. Meeting national standards does not serve these important goals. They may, however, serve the laws of the market place. Market place competition, as is invariably the case, will define us in terms of "haves" and "have nots" and will lead inevitably to ethnic, economic, and ability segregation.

The Limitations of Standard Setting

The national standards strategy may, ultimately, fail for it attempts change within the existing education system. So many factors that influence the outcomes of education lie outside of the existing system and as such will not be influenced by setting standards. Education is practiced within a social and economic context. Home and parental expectations cannot be subject to standards; they vary enormously across the socio-economic spectrum.

The national standards movement, in common with all education reform movements, expresses itself in egalitarian terms (e.g. "all students"). It proposes a common structure and measurable national outcomes. However, current curricula feature a maze of structures that differentiate students into tracks, ability groupings, special and regular education, gifted and talented programs, remedial and enrichment experiences, and so forth. How do we set national standards for students in such a differentiated structure?

Proponents of national standards may set their criteria for compliance but students respond to signals from other sources. The labor market sends signals to students about

1013

the connection between their educational achievements and their economic prospects. An economic upturn and the consequent prospect of employment sends a much clearer signal to students than the possibility of meeting mandated national standards.

The legitimacy and effectiveness of the standards approach may depend, ultimately, on the ability of the reformers to strike a balance between the common culture and the needs of the diverse elements within it. In the past, top-down reform with its "cookie-cutter" approach has not been particularly successful for it neglects the diverse infrastructure and the local discretion that are integral to education. Perhaps the US educational enterprise has grown to be so vast, so diverse and so bureaucratic that it is unable to respond to the challenge of systemic change implied by national standards. In 1990, Chubb and Moe concluded that the present democratic governance of education had left the system overbureaucratized and unresponsive. In their view, education is too hierarchical, too rule-bound, and too formalistic. Further, the specific political institutions by which the schools are governed actively promote and protect this overbureaucratization.

In Conclusion

There are signs that educational reform under the aegis of national standards is not about to happen. Some educators are breathing a sigh of relief while others are bemoaning a lost opportunity. The standards - norms - testing approach is a reductionist view of education. It flies in the face of educational theory from the Deweyan, student-centered to the constructivist approach currently occupying center stage in educational thinking. A nation as culturally and ethnically diverse as the United States, with an education system rooted in traditions of state and local governance, is unlikely to reach national consensus over content and performance standards, at least in the short term.

Inevitably, the use of national standards, for accountability purposes, will lead to conflict between levels of educational governance. If local educators are held accountable for performance standards those schools and districts that lack resources will cry foul. The addition of unfunded mandates to the existing gross inequities in the provision of educational resources will prove disastrous.

Finally, the deep suspicion of government that is almost integral to the nation, may prove the undoing of the whole enterprise. The implementation of national educational standards can be viewed simply as public sector officials aiming to expand their authority. National standards take us into the arena of congressional debate where politics, not education, is the standard fare. Politicos are interested in the 'short term fix'; their lives are bounded by considerations of re-election. The implementation of national standards is, by its very nature, a long term operation. In such a mismatch, Washington will not sustain its interest in education reform.

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1014

Invitation For Proposals

Annual Meeting of the Mid-Western Educational Research Association

October 15-18, 1997
Holiday Inn - Mart Plaza, Chicago, Illinois

Thomas S. Parish, Program Chair

Proposal Deadline: April 15, 1997

Plan now to attend the exciting 1997 Annual Meeting of the MidWestern Educational Research Association. The 1997 program includes a variety of elements which reflect the tremendous growth and energy of the organization while maintaining the strong collegiality and support for which MWERA is known. A wide array of presentation formats, including symposia, panel discussions, workshops, and fora allow authors the greatest flexibility in disseminating their work. Plenary sessions will feature respected scholars representing a range of perspectives on education and research Issues. And for the second year the convention will be held at the Holiday Inn at Mart Plaza. The hotel features comfortable, modern conference rooms, spacious guest rooms offering breathtaking views from high above the city, an indoor pool and exercise facility, and hundreds of shops, restaurants, and entertainment only a short, safe walk away,

Please accept this invitation to participate in the 1997 Annual Meeting. The Mid-Western Educational Research Association offers researchers, scholars, and students of all types, perspectives, and levels, the opportunity to share ideas in a supportive yet challenging environment, to strengthen existing professional friendships, and to build new ones.

General Information

1. Any educational professional may submit a proposal, whether or not a member of MWERA. Non-members must join MWERA upon notification of an accepted proposal.
2. Typical presentation formats include paper presentations, roundtables, poster-paper sessions, and symposia, among others. However, alternative or experimental formats which may be better suited to the nature of the research are welcomed. Participants are encouraged to propose formats which best communicate their scholarship or which promote scholarly debate about research and theoretical issues. The Program Committee reserves the right to make final decisions concerning presentation format, grouping, or scheduling.
3. **All proposals must be received by the appropriate senior division chair not later than April 15, 1997.** No submissions will be accepted by FAX or e-mail. Please note that this date is approximately one month earlier than in the past.
4. Papers presented at MWERA are expected to present original scholarship conducted by the author(s) and which has not been previously published. Further, it is a violation of MWERA policy to promote commercially available products or services (except as Exhibits) which go beyond the limits of appropriate scholarly/scientific communication. Individuals who wish to display educationally related products or services are encouraged to contact Dr. Sharon McNeely, Assistant Program Chair for Exhibits, P.O. Box 34421, Chicago, Illinois 60634, (312) 794-2786.
5. All persons attending the Annual Meeting, whether as participants or presenters are expected to register for the meeting. All sessions listed in the program will be open to any registered participant; however, enrollment may be limited and a small additional fee may be required for some workshop sessions. Registration materials for the Annual Meeting will be published in the *Mid-Western Educational Researcher* or can be obtained by contacting the Program Chair or the Executive Officer.
6. Presenters are responsible for submitting a completed version of their conference paper to both the chair and discussant assigned to their session on or before September 15, 1997. Papers not available to the discussant and chair may be eliminated from the program at the discretion of the program chair.
7. Presenters must provide complete copies of their papers or detailed handouts to attendees at their sessions.
8. Overhead projectors and screens will be provided by MWERA in most rooms. Presenters who will need additional AV equipment are responsible for arranging such with the hotel and at the presenter's expense.
9. MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals. Unless expressly prohibited in writing by the author(s), summaries may also be made available to the press or other interested parties upon request. Such limited distribution does not preclude subsequent publication by the author(s).
10. Authors of accepted proposals assume the ethical and professional responsibility to appear at the Annual Meeting and to participate in their presentation or assigned session. When circumstances preclude author(s) from doing so, it is the responsibility of the author to arrange a suitable substitute and to notify the Program Chair in advance.

Session Format Descriptions

Paper Presentation: Paper sessions are intended to allow authors the opportunity to make short, relatively formal presentations in which they overview their papers to an audience. Three to five individual papers dealing with related topics are grouped into a single session of from 1-1/2 to 2 hours. The author(s) of each paper is(are) allowed approximately 15 minutes to present the highlights of the paper, and a single discussant is allowed 15 minutes to comment on the papers. Authors are expected to provide complete copies of their papers to all interested audience members.

Poster Session: Poster sessions allow extended, one-to-one interaction between authors and interested individuals. Authors of several papers are provided space in which they can display stand-on-table posters or other visual materials which reflect the nature of their papers for 45-50 minutes. Interested individuals are free to move from poster to poster, inquiring of or talking with authors of their choice. Authors are expected to provide complete copies of the paper on which the poster is based to all interested individuals.

Symposium: A symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. Symposium organizers are expected to identify the topic or issue, identify and ensure the participation of individual speakers who will participate, prepare any necessary materials for the symposium, and chair the session. It is suggested, though not required, that the speakers or symposium organizer will provide to interested individuals one or more papers relevant to, reflective of, or drawn from the symposium.

Roundtable Session: Roundtable sessions are intended to provide opportunities for interested individuals to participate in a dialogue with other interested individuals and the author(s) of a paper. Authors are provided a small table around which interested individuals can meet to discuss the author(s)' paper. Interested individuals are free to move into and out of these discussions as they wish. Authors are expected to make available complete copies of the paper on which the roundtable discussion was focused.

Discussion Group/Forum: These sessions are intended to allow maximum interaction between the session organizers and interested individuals on a topic or issue of debate or interest. Unlike a symposium, wherein the organizer intentionally invites individuals who represent particular points of view to speak to audience members, the discussion or forum formats are designed to provoke discussion among all participants. The organizer is expected to identify a topic or issue which is likely to be of interest and a provocative way of initiating the discussion, and to monitor or mediate the discussion.

Workshop: Workshops are intended to provide an extended period of time during which the workshop leader helps participants develop or improve their ability to perform some process (e.g., how to provide clinical supervision or appropriately use loglinear analysis). Organizers may request from 1-1/2 to 3 hours, and are responsible for providing all necessary materials for participants. Workshops typically are scheduled for Wednesday afternoon, but may be scheduled throughout the conference. Organizers may, if they wish, receive an honorarium based upon the number of paid participants in their workshop and the fee schedule.

Alternative Session: The form, topics, and format of alternative sessions are limited only by the imagination and creativity of the organizer. These options are intended to afford the most effective method or approach to disseminating scholarly work of a variety of types. Proposals for alternative sessions will be evaluated on their appropriateness to the topic and audience, their suitability to meet limitations of time, space, or expense for MWERA, and the basic quality or value of the topic. The organizer of alternative sessions is responsible for identifying all major participants or speakers, developing and providing any necessary materials, and conducting or mediating the session. Because a variety of approaches may be proposed within this category, alternative session proposals should include a brief rationale for the alternative being proposed.

Guidelines for Submitting Individual Proposals

Individual proposals is used to describe any proposal intended to present a single piece of scholarship by one or more authors. The most basic example of an individual proposal would be one in which an individual scholar proposes to present a paper reporting on his or her research. This paper could be assigned to a paper session with other similar papers, a roundtable session, or a poster session. Similarly, in instances where multiple scholars have collaborated on a single work, an individual proposal would be appropriate.

The presenting or lead author of an accepted proposal must ensure that the paper is presented at the Annual Meeting. If the lead author is unable to present the paper, he or she is responsible for arranging an acceptable substitute and for contacting the Division or Program Chair as soon as possible.

BEST COPY AVAILABLE

Materials to be Submitted With an Individual Session Proposal

Individual Proposal Cover Sheet. (see attached). Six (6) copies with all items, including subject descriptors, completed.

Summary. Six (6) copies of a 2-3 page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8-1/2x11" paper in no smaller than 10 point type, with 1" margins. Proposals which do not meet these criteria may be refused by the Division Chair without review.

The summary should explicitly address as many of the following as appropriate, and preferably in this order: (a) objectives, goals, or purposes; (b) perspective(s) and/or theoretical framework; (c) methods and/or techniques (data source, instruments, techniques, procedures); (d) results or conclusions; and (f) educational or scientific importance of the work. Individual proposals for alternative sessions should also include a brief rationale for the proposed format.

For three copies of the summary, the heading should use the following format. In the upper left corner, type the title of the submission, author(s), and institution(s). In the upper right corner, state the name of the presenting or lead author and his or her complete mailing address (including e-mail). For the remaining three copies, only the title of the paper should appear.

Abstract. Three (3) copies of a 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. Abstracts must be type-written, single-spaced, using 12-point Arial or Universal font. Use clear, precise language which can be understood by readers outside your discipline. In the upper left corner, type the title of the paper, the name and institutional affiliation of each author.

Envelopes. Four (4) stamped, self-addressed, business-sized envelopes. These will be used to inform you of: (1) receipt of the proposal by the division chair; (2) the decision about your paper's acceptance; (3) your scheduled session time; and (4) additional information which you may need prior to the conference.

Index Cards. Two (2) 3x5" index cards. These should contain the following, type-written information: (a) title of the paper IN CAPS across the top; (b) the full name, institutional affiliation, complete mailing address with zip code, business telephone number, FAX number, and e-mail address for the lead or presenting author; and (c) full name and institutional affiliation of each additional author.

Guidelines for Submitting Multiple-Presenter Proposals

Multiple-presenter proposals is used to refer to proposed session formats which are organized to allow two or more presenters or speakers to address a single topic, issue, or problem. Examples of these sessions would include symposia, panel discussions, or forums, and alternative session formats meeting the above criteria. This format is not intended to allow each of several authors to address his or her contribution to a single work. Rather, the multiple presenters should reflect several perspectives, methodologies, or findings regarding the particular topic.

Organizers of multiple-presenter sessions are expected to have the consent of all presenters before submitting the proposal and to chair the session or specify another individual to do so. The organizer of accepted multiple-presenter proposals is responsible for ensuring that each person named as a participant will be present at the Annual Meeting. Should unforeseen circumstances prevent a named participant from attending, the organizer must identify a suitable replacement, notify all other presenters of the change, and inform the Division Chair or Program Chair.

Materials to be Submitted With a Multiple-Presenter Proposal

Multiple-Presenter Proposal Cover Sheet. (see attached). Six (6) copies with all items, including subject descriptors, completed.

Summary. Six (6) copies of a 2-3 page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8-1/2x11" paper in no smaller than 10 point type, with 1" margins. Proposals which do not meet these criteria may be refused by the Division Chair without review.

The summary should explicitly address as many of the following as appropriate, and preferably in this order: (a) descriptive title of the session; (b) the importance of the topic, issue, or problem; (c) names, institutional affiliations, and specific contribution or perspective to be contributed to the session by each presenter; (d) an explanation of the basic format or structure of the session and why it is relevant in light of the topic; (e) a brief explanation of the role of the chair, organizer, mediator, or discussant; and (f) anticipated audience and audience involvement.

For all copies of the summary, the heading should use the following format. In the upper left corner, type the full name, institutional affiliation, mailing address including zip code, business telephone, home or evening telephone, and e-mail address of the session organizer.

Abstract. Three (3) copies of a 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. Abstracts must be type-written, single-spaced, using 12-point Arial or Universal font. Use clear, precise language which can be understood by readers outside your discipline. In the upper left corner, type the title of the paper; the name, institutional affiliation, mailing address, and telephone number of the session organizer; and full name and institutional affiliation of each presenter.

Envelopes. Four (4) stamped, business-sized envelopes, preaddressed to the organizer. These will be used to inform you of: (1) receipt of the proposal by the division chair; (2) the decision about the session's acceptance; (3) the scheduled session time; and (4) additional information which may be needed prior to the conference.

Index Cards. Two (2) 3x5" index cards. These should contain the following, type-written information: (a) title of the paper IN CAPS across the top; (b) the full name, institutional affiliation, complete mailing address with zip code, business telephone number, FAX number, and e-mail address for the session organizer. If other than the session organizer, this information must also be included for the session chair, mediator, or discussant.

Guidelines for Submitting Workshop Proposals

Workshop topics should be of interest and use to a sizeable number of MWERA members. Presenters may elect to receive an honorarium based upon the number of participants attending the workshop. All persons listed as presenters are required to appear at the Annual Meeting and to conduct the workshop at the designated time. Most workshops will be held on Wednesday afternoon.

Materials to Be Submitted With a Workshop Proposal

Workshop Proposal Cover Sheet. (see attached). Six (6) copies with all applicable items, including descriptors, completed.

Summary. Six (6) copies of a 2-3 page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8-1/2x11" paper in no smaller than 10 point type, with 1" margins. Proposals which do not meet these criteria may be refused by the Workshop Chair without review.

The summary should explicitly address as many of the following as appropriate, and preferably in this order: (a) descriptive title of the workshop; (b) objectives, goals, purposes of the workshop; (c) names, institutional affiliations, and specific contributions of each workshop leader; (d) the importance or value of the workshop for participants and a statement about the likely attraction of the workshop for participants; (e) methods, techniques, or approaches to instruction (especially how participants will be allowed to apply what they learn); and (f) a brief description of the presenter's(s') relevant experience.

For all copies, the heading of the 2-3 page summary should use the following format. In the upper left corner, type the full name, institutional affiliation, mailing address including zip code, business telephone, home or evening telephone, and e-mail address of each workshop leader or presenter.

Abstract. Three (3) copies of a 100-150 word narrative abstract should be prepared for publication in the Annual Meeting Abstracts. Abstracts must be type-written, single-spaced, using 12-point Arial or Universal font.

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Use clear, precise language which can be understood by readers outside your discipline. In the upper left corner, type the title of the workshop, the name and institutional affiliation of the workshop organizer(s).

Envelopes. Four (4) stamped, business-sized envelopes, preaddressed to the workshop organizer for: (1) acknowledgement of receipt of the proposal by the Workshop Chair; (2) notification of the acceptance of the workshop proposal; (3) scheduled workshop time; and (4) additional information which may be needed prior to the conference.

Index Cards. Two (2) 3x5" index cards, typed in the following format: (a) title of the workshop IN CAPS across the top; (b) full name of the organizer, followed on subsequent lines by his or her complete mailing address with zip code, business and home telephone numbers with area code, FAX number, and e-mail address.

Workshop proposals should be submitted to Dr. Mary Ann Wham, College of Education, University of Wisconsin-Whitewater, 800 West Main Street, Whitewater, Wisconsin 53190.

Where To Submit Proposals

Proposals should be submitted to the Chair of the division listed below with which it is most closely aligned. Proposals may be submitted to only one division. Division Chairpersons hold the right to forward proposals which they believe might best be suited to another division to the appropriate Division Chair. Questions about the appropriateness of proposals for particular divisions should be directed to the Division Chairs.

For consideration, complete proposal materials must be received by the Division Chair not later than April 15, 1997.

Division A: Administration and Leadership

This division is concerned with research, theory, development, and the improvement of practice in the organization and administration of education.

Larry McNeal
Dept. of Educational Administration & Foundations
Illinois State University
DeGarmo Hall, Room 342
Normal, IL 61790-5900
Voice: (309) 438-5155
Fax: (309) 438-8683
e-mail: lmcneal@rs6000.emp.ilstu.edu

Division B: Curriculum Studies

This division is concerned with curriculum and instructional practice, theory, and research.

James H. Powell
Secondary Education
Teachers College 825
Ball State University
Muncie, IN 47306
Voice: (317) 285-5474
Fax: (317) 285-5479
e-mail: 00jpowell@bsuvc.bsu.edu

Division C: Learning and Instruction

This division is concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors.

Marlene Schommer
College of Education #123
Wichita State University
Wichita, KS 67260-0123
Voice: (316) 978-3326
Fax: (316) 978-3102
e-mail: Schommer@twsuvm.uc.twsu.edu

Division D: Measurement and Research Methodology

This division is concerned with measurement, statistical methods, and research design applied to educational research.

Bruce G. Rogers
Educational Psychology and Foundations
College of Education
University of Northern Iowa
Cedar Falls, IA 50614-0607
Voice: (319) 273-6115
Fax: (319) 273-6997
e-mail: Bruce.Rogers@uni.edu

Division E: Counseling and Development

This division is concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies.

Eddie E. Glenn
Illinois State University
61 G DeGarmo Hall
Campus Box 5910
Normal, IL 61790-5910
Voice: (309) 438-7884
Fax: (309) 438-8699
e-mail: eeglenn@ilstu.edu

Division F: History and Philosophy

This division is concerned with the findings and methodologies of historical research in education.

Elizabeth Johnson
234 Boone Hall
Eastern Michigan University
Ypsilanti, MI 48178
Voice: (313) 487-6826
Fax: (313) 464-6471
e-mail: beth.johnson@emich.edu

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Division G: Social Context of Education

This division is concerned with theory, practice, and research on social, moral, affective and motivational characteristics and development, especially multicultural perspectives.

Joan Timm
College of Education and Human Services
800 Algona Boulevard
University of Wisconsin-Oshkosh
Oshkosh, WI 54901-8666
Voice: (414) 424-7240
Fax: (414) 424-0858
e-mail: timm@vaxa.cis.uwosh.edu

Division H: School Evaluation and Program Development

This division is concerned with research and evaluation to improve school practice, including program planning and implementation.

Kathy Sparrow
Work OT Staff Development Center
65 Steiner Avenue
Akron, OH 44301
Voice: (330) 434-1661 ext. 3217
Fax: (330) 434-9515
e-mail: ksparrow@akron.ohio.gov

Division I: Education in the Professions

This division is concerned with educational practice, research, and evaluation in the professions (e.g. medicine, nursing, public health, business, law, and engineering).

Pamela Kahlich
K J Learning Partners, Inc.
333 N. Kenyon Street
Indianapolis, IN 46219
Voice: (317) 356-6836
Fax: (317) 356-6836

Division J: Postsecondary Education

This division is concerned with a broad range of issues related to two-year, four-year, and graduate education.

Jacqueline C. Rickman
Department of Educational Foundations
Horrabin Hall 808
1 University Circle
Western Illinois University
Macomb, IL 61455-1390
Voice: (309) 298-1183
Fax: (309) 298-2222
e-mail: jc-rickman@wiu.edu

Division K: Teaching and Teacher Education

This division is concerned with theory, practice, and research related to teaching at all levels and in-service and preservice teacher education, including field experience supervision and mentoring.

Mary Bendixen-Noe
c/o Integrated Teaching and Learning
The Ohio State University-Newark
1179 University Drive
Newark, OH 43055-1797
Voice: (614) 366-9479 ext. 469
Fax: (614) 366-5047
bendixen-noe.1@osu.edu

Workshops

Mary Ann Wham
College of Education University of Wisconsin - Whitewater
800 W. Main Street
Whitewater, Wisconsin 53190
Voice: (414) 472-5377
WHAM@UWWVAX.UWW.EDU

Exhibits

MWERA welcomes individuals and companies who wish to display commercially available products, materials, or services which may be of interest to our members. Such displays often include current publications, software, instructional materials, media, or consulting services. Individuals who wish to participate in these exhibits are encouraged to contact:

Sharon McNeely
Northeastern Illinois University
Voice: (773) 794-2788
Fax: (773) 736-7033
e-mail: s-mcneely@neiu.edu

For Additional Information

Additional information can be obtained by contacting the 1997 Program Chair:

Dr. Thomas S. Parish
Third Floor, Bluemont Hall
College of Education
Kansas State University
Manhattan, KS 66502
Voice: (913) 532-5537
Fax: (913) 532-7304
e-mail: tparish@coe.educ.ksu.edu

Information about registration and dues can be obtained by contacting the Executive Officer:

Jean Pierce
Dept. EPCSE
Northern Illinois University
DeKalb, IL 60115
Voice: (815) 753-8470
Fax: (815) 753-9250
e-mail: jpierce@niu.edu

INDIVIDUAL PROPOSAL COVER SHEET

(Paper/Poster/Roundtable and Alternative Sessions)

(Please type)

1. **Please check the type of format you prefer for this session:**

   Paper Session _____ Poster Session _____ Roundtable Session _____

   Alternative Format (please describe): _____

2. **Title of Submission _____**

   _____

3. **Name of first or lead author: _____**
   Last Name First Name M.I.

   Affiliation: _____ Telephone: (____) _____

   Mailing Address: _____

   _____

   FAX Number : (____) _____ Complete e-mail address: _____

4. Attach a separate sheet which lists any co-authors including their full name(s), institutional affiliations, and telephone numbers. Circle the names of all authors who are graduate students. (*Please note*: Only first or lead authors will be scheduled to avoid conflicts.)

5. Are you an MWERA member? Yes_____ No_____

6. Subject Descriptors: Indicate 3 one- or two-word descriptors for this submission:

   (1)_____ (2)_____ 3)_____

7. I hereby certify that this proposal has not been previously presented or published nor has it been submitted to any other Division in MWERA. I further certify that, if this paper is accepted for the 1997 Annual Meeting, I will register for the conference at the appropriate full rate, appear, and deliver the presentation at the assigned time and on the assigned date.

   _____ _____
   Signature **Date**

Be certain to enclose all of the following with your proposal:

SIX SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH OF THE FOLLOWING:

- **Individual Proposal Cover Sheet**
- 2- to 3-page summary (3 copies without author information; 3 with author information)

PLUS:

- **Three copies - 100-150 word narrative abstract in 12-point Arial or Universal font**
- **Four self-addressed, stamped, business-sized envelopes**
- **Two 3x5" index cards with information noted in "Guidelines for Submitting Individual Proposals"**

Abstracts which are incomplete or longer or not in appropriate format will not be included in the Program Abstracts booklet.

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY April 15, 1997

MULTIPLE-PRESENTER PROPOSAL COVER SHEET

(Symposia/Forums/Panel Discussions and Alternative Sessions)

(Please type)

1. **Please check the type of format you prefer for this session:**

   Symposium _____ **Forum** _____ **Panel Discussion** _____

   Alternative Format (please describe): _____

2. **Please indicate the approximate amount of time you would prefer for this session (Please note: the exact time allotted to each session will be determined by the Division and/or Program Chair):**

   45 minutes _____ **90 minutes** _____ **Other (please specify)** _____

2. **Title of Submission** _____

   _____

3. **Organizer's Name:** _____
   Last Name **First Name** **M.I.**

   Affiliation: _____ **Telephone:** (____) _____

   Mailing Address: _____

   _____

   FAX Number : (____) _____ **Complete e-mail address:** _____

4. **Attach a separate sheet which lists all presenters including full names, institutional affiliations, telephone numbers, and TITLE or topic which each will address.** Circle the names of all authors who are graduate students.

5. **Are you a member of MWERA?** **Yes** ____ **No** ____

6. **Subject Descriptors: Indicate 3 one- or two-word descriptors for this submission.**

   (1) _____ **(2)** _____ **(3)** _____

7. I hereby certify that this proposal has not been previously presented or published nor has it been submitted to any other Division in MWERA. I further certify that, if this paper is accepted for the 1997 Annual Meeting, I will register for the conference at the appropriate full rate, appear, and deliver the presentation at the assigned time and on the assigned date.

   _____ _____
   Signature Date

Be certain to enclose all of the following with your proposal:

SIX SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH OF THE FOLLOWING:

- **Multiple-Presenter Proposal Cover Sheet**
- **2 to 3 page summary (all with author information)**

PLUS:

- **Three copies - 100-150 word narrative abstract in 12-point Arial or Universal font**
- **Four self-addressed, stamped, business-sized envelopes**
- **Two 3x5" index cards with information noted in "Guidelines for Submitting Multiple Presenter Proposals"**

Abstracts which are incomplete, or longer or not in appropriate format will not be included in the Program Abstracts booklet

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY April 15, 1997

WORKSHOP PROPOSAL COVER SHEET

(To be submitted to the Workshop Chair)

(Please type)

1. **Please indicate the approximate amount of time you would prefer for this workshop (Please note: the exact time allotted to each workshop will be determined by the Workshop and/or Program Chair):**

   45 minutes _____ 90 minutes _____ Other (please specify) _____

2. **Descriptive Title of Workshop** _____

   _____

3. **Organizer's Name:** _____
   Last Name First Name M.I.

   Affiliation: _____ **Telephone: (____)** _____

   Mailing Address: _____

   _____

   FAX Number : (____) _____ **Complete e-mail address:** _____

4. **List all workshop presenters or instructors including full names, institutional affiliations, telephone numbers, and aspect which each will address.** Circle the names of all authors who are graduate students.

5. **Are you a member of MWERA?** **Yes _____** **No _____**

6. I hereby certify that this proposal has not been previously presented or published nor has it been submitted to any other Division in MWERA. I further certify that, if this paper is accepted for the 1997 Annual Meeting, I will register for the conference at the appropriate full rate, appear, and deliver the presentation at the assigned time and on the assigned date.

   _____ _____
   Signature Date

Be certain to enclose all of the following with your proposal:

SIX SETS OF MATERIALS, stapled together, EACH SET CONTAINING ONE OF EACH OF THE FOLLOWING:

- Workshop Proposal Cover Sheet
- 2 to 3 page summary (all with workshop leader or organizer information)

PLUS:

- Three copies - 100-150 word narrative abstract in 12-point Arial or Universal font
- Four self-addressed, stamped, business-sized envelopes
- Two 3x5" index cards with information noted in "Guidelines for Submitting Workshop Proposals"

Abstracts which are incomplete, or longer or not in appropriate format will not be included in the Program Abstracts booklet

THIS INFORMATION MUST BE RECEIVED BY THE APPROPRIATE DIVISION CHAIR BY April 15, 1997

Featured Address

How Teachers Connect Research and Practice

Mary M. Kennedy
Michigan State University

The importance of teacher's prior beliefs and values as influences on teaching practice has become increasingly apparent in recent years. The presence of these ideas raises new questions about the role of research in teaching. If teachers are guided mainly by their own belief systems, for instance, how can we expect research to contribute to practice? To examine the relationship between teachers prior beliefs and their responses to research, I initiated a study called the *Research and Teacher Learning* (RTL) study. As it's name suggests, it is about the relationship between research and teacher learning. We were particularly interested in how research can influence teacher learning. The study addresses two very broad questions:

1. What and how do teachers learn from *reading* research studies?
2. What and how do teachers learn from *conducting* research of their own?

Before going into some of the findings from this study, let me describe the study in more detail.

We interviewed a sample of just over 100 teachers, all of whom were selected because they were participating in some form of continuing education or professional development that involved research. Some were participating in a masters degree program and read research in their classes, some were participating in a district-sponsored teacher-research program. All teachers were participating in a program that included some attention to research, but the programs differed in what they did with research and in whether the teachers were novices, working on their initial degree, or experienced teachers engaged in continuing education.

The interview itself consisted of four main parts. First, because we knew that prior beliefs and values were important, we devised a set of questions that we hoped would enable us to learn about these. We asked them, for instance, to describe a teacher whom they admired and to say why they thought this teacher was admirable, to describe a lesson they had done recently that they felt very satisfied with, and to say why they were satisfied with it, and so forth. All of these questions were designed to reveal their beliefs and values about teaching. The second part of the interview probed their beliefs and values about research, and for similar reasons. We thought that their receptivity to research might depend not only on how the study squared with their own their views about teaching, but also on their belief in the inherent value of research and how it could or should contribute to their work.

The third and fourth sections address their experiences conducting their own research and their responses to research other people had done, respectively. About three quarters of the sample had conducted teacher research as part of their programs and we queried them about what they studied, where their question came from, how they gathered data, how they analyzed it, and what they learned from the whole experience.

To learn their responses to research conducted by others, we actually gave them five research summaries to read. Then, when we met with them again, we asked them their responses to these studies. We spent between 20 and 30 minutes on each piece of research, asking them what they thought the author's purpose was for doing the study, whether the study was persuasive to them or not and why, what they thought the author's conclusions were, whether the study was relevant to their own practice, and whether they thought the study would be useful to other teachers.

The resulting data base has a tremendous amount of information in it. In this paper, I concentrate on only a very small segment of the study that specifically addresses the way teachers connect research to their own teaching, and I do that by focusing on one particular study. My aim in this paper is to illustrate these processes with just two examples of teachers' responses to one study--Lisa Delpit's "Skills and other dilemmas of a progressive Black educator," published in the *Harvard Education Review* in 1986. Before discussing the ways in which these two teachers connected that study to their own practices, let me briefly review the study itself.

As a genre of research, Delpit's paper could be called a teacher reflection. In the paper, Delpit reflects on a tension she feels between the progressive ideals she learned in college and the traditional skills-based education she herself had received in a segregated Catholic school in the south. In college, Delpit was persuaded that students should not spend their time rehearsing meaningless skills, and that she should focus on the writing process for teaching writing. By the time she graduated she was a progressive educator, and when she began teaching she introduced learning stations, activity-based instructional materials, and a carpeted learning area. As time went on, though, she began to sense that, although her White students were learning, her Black students were playing. So she gradually re-introduced the desks, began making students practice handwriting, and in general becoming more traditional. Then she felt guilty because she wasn't as progressive as she wanted to be, and guilty because she wasn't teaching her Black students as much as she wanted.

This story goes on as Delpit returns to graduate school and gets her progressive ideas again reinforced. The pivotal event in the story, though, occurs when she has dinner with an old friend who is critical of the writing process. The friend

claims it was designed by White people to prevent Blacks from learning the skills they need to function in a White society. The friend says Black students are already fluent, and that what they need is skills.

That dinner had a substantial impact on Delpit, and she began canvassing educators of both races to learn more about their views. She learned that Blacks rarely participated in the writing process, and that even when they did it was usually for no longer than a year. She learned that Blacks felt excluded in writing workshops, and felt that their concerns about skills were not heard or addressed.

Delpit closes her narrative by saying that she now feels she can understand both sides of the issue. On one hand, minority students should not be subjected to a daily regimen of rehearsing meaningless, decontextualized subskills. A minority person who simply acquires basic skills becomes a low-level functionary. On the other hand, minority children need the skills that employers and guardians of higher educational institutions demand. Helping them become more expressive in their writing does not necessarily mean that they have acquired the skills needed to improve their social standing once they leave school. So, Delpit says, we need to find a way to teach these skills in the context of critical and creative thinking. She also believes that there is a lot to be gained from opening up the dialogue between advocates and critics of either approach, and that it is particularly important that leaders of the process approach pay attention to the legitimate concerns of minority educators.

Delpit's article is an excellent example of a teacher reflection, in that it is both earnest and penetrating. Delpit's genuine concern is apparent throughout the article, as is her intellectual honesty and rigor. It also is a complex story, for it addresses tensions between structured and open classrooms, between teaching fluency and teaching skills, and between Black and White values. It certainly should stimulate teacher thinking and it certainly should be relevant to most teachers.

To learn from research--or from anything else, for that matter--teachers must do the following:

1. Understand what the main message is from the study.
2. Test the validity of the message somehow.
3. Connect that message to their own situation.

To learn what teachers learn from Delpit's reflection, I first wanted to know what teachers understood Delpit's message to be. One of the questions we asked was what conclusions they thought Delpit had drawn. Some teachers described a conclusion having to do with pedagogy, some a conclusion having to do with race relations, and some listed both types of conclusions. Later, we reviewed the data and grouped teachers' responses into a few main categories, shown in Table 1.

Table 1 suggests that most teachers did correctly understand Delpit's main messages. With respect to pedagogy, the largest fraction understood Delpit to be saying that both sides were right, that teachers need to teach both skills and fluency. With respect to race, some thought Delpit's main point was that minority views need to be attended to in reform movements, and some though it was that different races need different kinds of instruction. Interestingly, many teachers, instead of articulating a conclusion, volunteered that they liked, or didn't like, Delpit's treatment of the race issue.

Table 1

Conclusions about Pedagogy Attributed to Delpit

Percent	Conclusion
1	Don't know
14	No conclusion about pedagogy mentioned
56	Both sides are right, need to do both
16	Different kids need different pedagogies
5	Delpit was in favor or (or opposed to) the writing process
8	Other Responses

Conclusions about Race Attributed to Delpit

Percent	Conclusion
40	No conclusions about race are mentioned
20	Minority views need to be attended to
25	Races need different kinds of instruction or have different needs
15	I like/don't like Delpit's treatment of the issue

Examples of "Other" Conclusions about Pedagogy

Ms. Whalon's conclusion:

Delpit wants minority kids to succeed and yet she wants them to keep their cultural heritage.

Ms. Woodland's conclusion:

If minorities are to create changes in society, we have to help them get to that point.

At the foot of Table 1 I've included two examples of "other" interpretations. These make it clear that some teachers did not fully understand Delpit's message. They've inserted some different ideas into the text. These anomalous interpretations are important, I will return to the problem these pose later on.

Once teachers understand the main message from a study, they need to evaluate the validity or invalidity of that message. To learn how teachers evaluated these studies, we asked if they agreed with the author's conclusion or not, and we asked them why. Again, we did not impose any categories of reasons on them, but instead categorized their reasons later on. Table 2 summarizes the main reasons teachers offered for either agreeing or disagreeing with the conclusions they had just attributed to Delpit. In addition, it shows the reasons they gave for agreeing or disagreeing with all the other studies they had read.

Table 2

Reasons for Agreeing or Not Agreeing with a Study's Conclusions

Reason Offered	Percent giving this reason (across all studies)	Percent giving this reason for the Delpit Reflection
No reason given	9	8
Conclusion consistent with values, beliefs	22	25
Consistent with experience	32	38
Consistent with other ideas or findings	8	5
Evidence supports conclusion	15	11
Critique of evidence	13	14
Study is factual, no agreement necessary	1	0

Two important points can be made about the patterns in Table 2. One is that teachers' reasons for agreeing or disagreeing with Delpit's reflection are not substantially different from the reasons they used to agree or disagree with any other study, even though the studies were quite different. That is, teachers who read Delpit's reflection also read a survey (Applebee, Langer, Mullis, & Jenkins, 1990), an experiment (Collins, Brown, & Holcum, 1991; Scardamalia, Bereiter, & Steinbach, 1984), a disciplinary study (Baron, 1982) and an historical analysis (Coleman, 1975). Many would argue that Delpit's reflection is closer to teaching practice than any of the others, but teachers did not use remarkably different criteria for evaluating it.

The second important trend apparent in Table 2 is that teachers used their own values, beliefs or experiences more often than any other criterion to test the validity of these authors' conclusions. Table 2 makes it clear that teachers are *already* connecting the study to their own situations, even at the stage of testing its validity. That is, connections to practice are not a third step in a process, something that is done only after the study is understood and tested for validity. Instead, it is something that is done early on, as part of the process of testing the validity of the study.

This creates an interesting question, for if studies are perceived as valid mainly when they are consistent with teacher's prior beliefs and experiences, how can teachers ever learn something new from research? Clearly, teachers need to do more than simply accept or reject studies. They need to draw some implications from them. We also asked teachers what implications the study had for their own practice, and Table 3 shows teachers' responses to that questions. Here again, I have aggregated across the five studies in the language arts package, but I have also given their responses to Delpit's reflection. Since Delpit's paper was explicitly aimed at provoking thought and dialogue, we might expect teachers' responses to it to differ somewhat from the others. However, the implications teachers drew from Delpit's reflection were not noticeably different from the implications they drew from entire set of studies.

Table 3

Implications Teachers Saw in Delpit's Reflection

Implications Mentioned	Percent of Teachers Responding to all studies	Percent of Teachers Responding to Delpit
No Influence	18	14
Gives new information	4	3
Validates existing beliefs	26	29
Sharpens thinking	17	23
Raises questions, provokes thought	15	18
Suggests a new goal to strive for	4	2
Suggests changing practice	3	8
Will try it out	10	3
Can include it in my curriculum	3	0

These findings suggest that teachers connect research to their practice in two very different ways. On one hand, they use their own beliefs, values, and experiences to evaluate the validity of the study, but on the other hand, they also take something new from the study, as it stimulates their thinking and prompts them to reinterpret their own experiences and to reconsider their practices.

Taken together, these tables suggest that teachers are quite able to connect research to their own practices. But they do not explain the fact that some teachers misconstrue the conclusions from research. In fact, our evidence suggests that these misconceptions derive, at least in part, from the fact that they are interpreting the studies in light of their prior beliefs and experiences. Teachers in this study were more likely to generate unusual or idiosyncratic interpretations of an author's conclusions when they used their prior beliefs and experiences to evaluate validity than they were when they relied on the evidence in the study, as Table 4 shows. Table 4 lists again the main reasons teachers agreed or disagreed with a study's conclusions, and then shows the fraction of teachers who used each reason *who also generated an idiosyncratic interpretation of the conclusion*. That is, of all the teachers who evaluated a study on the basis of its consistency with their own prior beliefs and values, 15 percent offered an idiosyncratic interpretation of the study's conclusion. Of all those who critiqued the evidence as a way of saying why they agreed or disagreed, only two percent offered idiosyncratic interpretations of the conclusions.

Table 4

Percent of "Other" Interpretations of Conclusions as a Function of Reasons for Agreeing or Disagreeing

Reason Offered	Percent of Conclusion Statements that were "Other"
No reason given	25
Conclusion consistent with values, beliefs	15
Conclusion consistent with experience	12
Consistent with other ideas or findings	12
Evidence supports conclusion	4
Critique of evidence	2
Study is factual, no agreement necessary	0

Table 4, then, suggests that the teachers who relied on their prior values and beliefs or on their experiences were more likely to formulate idiosyncratic interpretation of the study's conclusions than were teachers who relied on the study's evidence or on how consistent the study was with other research or ideas they were familiar with. So we have an ironic finding here: We know that, in order to learn from a study, teachers need to connect it to their own situations, but we also see that when they do that they are more likely to interpret the study idiosyncratically.

To illustrate how teachers connect research to their prior beliefs and experiences and how these connections influence their interpretations of the study, I have developed a strategy for graphically representing these connections. I include here two such graphic representations, one from a teacher whose interpretation of Delpit's conclusions seemed very close to Delpit's intention, and the other from a teacher whose interpretation was idiosyncratic. These schematics are shown in Figures 1 and 2.

In these figures, the different shapes represent different parts of the reasoning process. The figure in the center represents Delpit's reflection, and the ovals represent the teachers' interpretation of Delpit's conclusions. The clouds surrounding the study represent the teachers' thoughts, and the rectangles represent particular experiences that the teacher has related to the study.

The first figure shows Ms. Foss's responses to the Delpit reflection. There were three clusters of ideas in Ms. Foss's discussion. One, shown in the upper right, includes her experiences, which she defines as similar to Delpit, her thinking that she and Delpit are in the same place, her realization that her Black students are more fluent orally, and her interpretation of Delpit's conclusion that we have to teach skills in the context of critical thinking. The second cluster of thoughts is shown in the lower right, where Ms. Foss realizes that she has not actually taught in a more structured way, and so doesn't

Figure 1

Ms. Foss's Interpretation of Delpit's Article

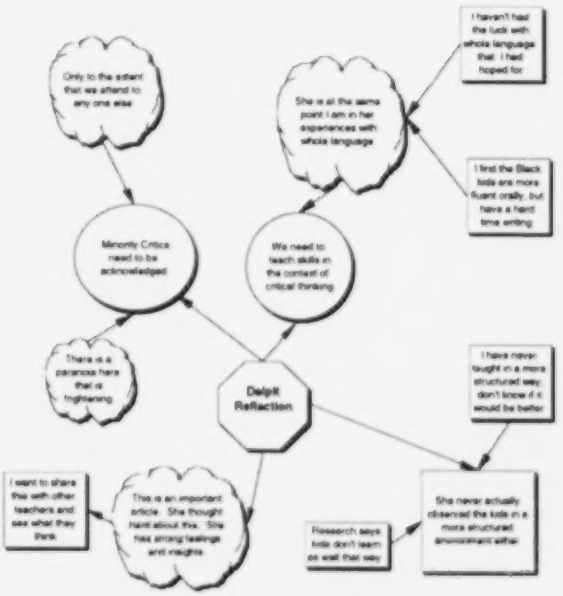
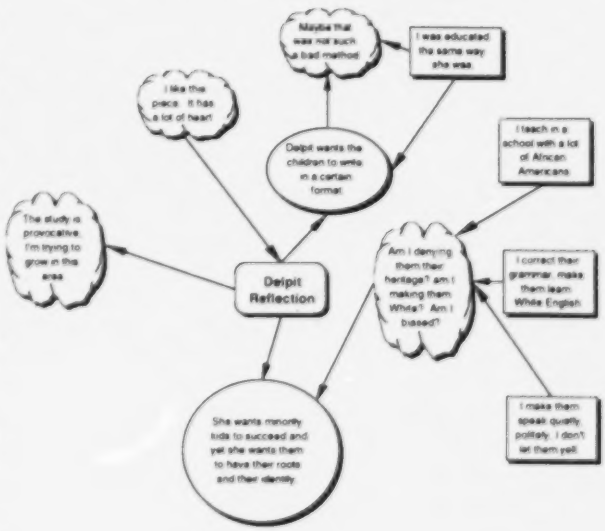

Only to the extent that we attend to any one else
She is at the same point I am in her experiences with whole language
I haven't had the luck with whole language that I had hoped for
I find the Black kids are more fluent orally, but have a hard time writing
Minority Critics need to be acknowledged
We need to teach skills in the context of critical thinking
There is a paranoia here that is frightening
Delpit Reflection
I have never taught in a more structured way, don't know if it would be better
I want to share this with other teachers and see what they think
This is an important article. She thought hard about this. She has strong feelings and insights
Research says kids don't learn as well that way
She never actually observed the kids in a more structured environment either

Figure 2

Ms. Whalon's Interpretation of Delpit's Article


Maybe that was not such a bad method
I was educated the same way she was
I like the piece. It has a lot of heart
Delpit wants the children to write in a certain format
I teach in a school with a lot of African Americans
The study is provocative. I'm trying to grow in this area
Delpit Reflection
Am I denying them their heritage? am I making them White? Am I biased?
I correct their grammar, make them learn White English
She wants minority kids to succeed and yet she wants them to have their roots and their identity
I make them speak quietly, politely. I don't let them yell

really know if these particular students would do better with that approach to teaching. In this cluster of thoughts, she also notes that research indicates that whole language is a more effective teaching method, and she realizes that Delpit has also not shown any evidence that Black students would do better in a more structured situation. This second cluster of ideas, then, suggests that Ms. Foss has evaluated Delpit's reflection for its evidence, and has realized that Delpit lacks an adequate comparison group.

Finally, in the upper left corner are Ms. Foss's ideas about race. She is dismayed to discover that Blacks are suspicious of the process writing, and comments on the level of paranoia she perceives in the article. She correctly interprets Delpit's argument that minority views need to be attended to, but offers a qualification of her own to the effect that they should not be listened to any more than any one else's views are.

After considering all of these things, Ms. Foss draws implications for her own practice, and these are shown in the lower left portion of the figure. She says this study is an extremely important article and that she plans to share it with colleagues, particularly her Black colleagues, because she wants to learn their views on this issue.

So Ms. Foss has done all three of the tasks: She has correctly understood both aspects of Delpit's conclusion, she has evaluated the validity of Delpit's evidence, and she has drawn some implications from the article for her own practice.

Now let's consider Ms. Whalon. Recall that I first referred to Ms. Whalon's interpretation of Delpit's conclusion in the context of Table 2, where her interpretation was listed as an example of an "other" interpretation. That conclusion is shown in this figure in two ovals. In the upper oval, Ms. Whalon says that Delpit wants children to write in a certain format. In the lower oval, Ms. Whalon says that Delpit wants minority children to succeed and yet she wants them to have their roots and their identity. This second interpretation is the one I listed as an "other" in Table 2, for Delpit never said anything in her paper about maintaining Black children's cultural heritage. She was much more concerned about assuring that they learned the skills they would need to succeed in a predominantly White society.

Now let's look at the beliefs and experiences that Ms. Whalon brings to this study, and see if they help us understand her misinterpretation. At the top right of the page is a cluster in which Ms. Whalon mentions that she was educated in the same way Delpit was, and she thinks, in retrospect, maybe that was not such a bad method after all. From there, she moves to interpreting Delpit as wanting students to write in a "certain format," by which I think she means standard White English.

The most important cluster, in terms of Ms. Whalon's interpretation of Delpit, consists of the experiences described in three boxes on the right side of the figure. In these boxes, Ms. Whalon tells us she teaches in a school with a lot of African-Americans; she corrects their grammar and tries to teach them White English; and she also makes them speak quietly and politely and doesn't let them yell. At the same time, she tells us in the cloud that she is worried that perhaps she is biased. Perhaps she is trying to make them into White people and denying them their cultural heritage. She is very unsure of her role as a White teacher of Black students when it comes to teaching language conventions. Ironically, she is probably teaching the kinds of skills that Delpit wants to make sure Black students get, but she is doing it with a great deal of personal angst. Her anxieties about her own role influence her interpretation of Delpit, such that she thinks, although Delpit wants Black kids to succeed, she also wants them to have their roots and their cultural identity. When we viewed Ms. Whalon's interpretation in the context of Table 2, it seemed idiosyncratic and inexplicable relative to the interpretations of other teachers. But when we view it in the context of her own experiences, values, and beliefs, this misinterpretation is not difficult to understand.

Interestingly, Ms. Whalon also has less to say about the validity of this article and less to say about its implications for her practice. With respect to the validity of Delpit's study, Ms. Whalon's assessment, shown in the upper left section of Figure 2, is more informal than Ms. Foss's. She likes the article because it "has heart." She does not really critique the article closely at all. With respect to its implications for her practice, she says it is provocative and that she is trying to grow in this area, but indicate anything in particular that she has drawn from the article or that she intends to do with the article.

So Ms. Whalon has mis-read the main message of the article, and evaluated it more informally than the other teacher, and her connections to her own experience occur more when she is interpreting the article than when she is drawing implications from it.

These two teachers, then, have responded to Delpit's reflection in very different ways. They differed in how accurately they understood the main message, in how carefully they evaluated the validity of the argument, and in how fully they teased out implications from the study for their own practice. They illustrate for us the importance of teachers' prior beliefs and experiences in interpreting research findings, not just in drawing implications from research, but in assessing its validity as well.

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Schedules and Plans and Things You Should Know

Sharon McNeely, MWERA President
Northeastern University

The Association Council and the Board of Directors of MWERA have been busy dealing with a number of issues and trying to meet the needs of association membership. In the past few years a number of important initiatives have taken place that I would like you to know about. There are also a number of other upcoming events you should mark on your calendar and be sure to attend!

AERA is in Chicago this year. We are hoping that MWERA membership comes to AERA, and shows everyone what high quality work our members do. At the last Board of Directors' meeting, we agreed that we should have a social hour at AERA that is hosted by MWERA. In addition to attendance by MWERA members, we hope that we will attract potential members, and friends from other regions! Watch your AERA schedule for the time of this event.

The Holiday Inn Mart Plaza has been kind enough to agree to provide comparable room rates for AERA. The hotel may not be listed in your AERA program. Call them directly at 312-836-5000. Please make sure you use this number and not the number that was listed in the program. That was a bad typo! If you were thinking that the Bismarck might be a spot to stay, you need to know that the Bismarck is closed for business as of January 1997. I am not sure if and when they will reopen. They are dealing with a number of building-related issues.

I am so glad that we decided to change hotels this past year. I know that it was a bit of a problem for some of our members, but I think that the vast majority were pleased with the change. I also am really glad that we aren't trying to hotel-hunt right now, with the Bismarck closing. Quality, inexpensive hotel space for an organization our size is so limited in the downtown Chicago area! I don't want to rehash the numerous problems that we were having in dealing with constantly changing managements at the Bismarck, or the lack of space, or the issues of security, etc. Rather, I would like to take a moment to dwell on the positives. After our membership told us that they want the convention to stay in downtown Chicago, we began a number of initiatives. We toured numerous hotel in the Chicago area, and sought information about rates, space, etc. We considered the ease of membership traveling to hotels, parking, safety, and cost. We also wanted a place where the person we talked to one week would be available the next week, and our contract would still be valid and on the books! We were blessed with the wise guidance of the years of Charles Anderson working with the Bismarck to tell us what issues we needed to clarify up front, and what problems we might anticipate. When we found the Holiday Inn Mart Plaza, we felt we had the best of all worlds.

Chicago is an expensive city to visit. The average hotel room rates are typically 50 to 75% more than what we are able to book for the conference. Few hotels have meeting space that is not outrageously priced. Few hotels would let us bring in equipment, use the lobby for exhibits, etc. Few hotels would hold rooms so late before a conference because so many of our members get materials after their semesters or quarters start. The Holiday Inn provided us with the best offer. Yes, we now have to pay for meeting space. However, if we have enough sleeping rooms used by our membership, that cost is minimal. There were some problems this first year at the Holiday Inn with booking rooms. The problem was one of getting the word out that the hotel phone number was printed wrong, and getting membership to meet the deadline. The deadline for booking rooms is important. The number of rooms booked by deadline is part of what goes into figuring the total cost of using the hotel for the conference. PLEASE book your room early. In fact, now would be a great time to make that reservation for the 1997 meeting.

Yes, we are locked into the hotel for 1997. Mark your calendar for October 15-18! Call the hotel and make your reservation! Also, we are moving to lock in the next few years. Mark your calendars for MWERA to be October 14-17 in 1998, and October 16-19 in 1999. We'll let you know about the year 2000 shortly!

The Board of Directors knew that the move to any hotel would be expensive for the organization for the first couple of years. We have new costs to consider, and have to find some new ways to cover those costs without raising the rates of membership, registration or dues. I hope that if you have some ideas, you will share them with us. One of the hidden costs to us that is not a large problem, but is also one that we want to acknowledge and try to deal with, is the problem of cancellations and no shows for the program. We know that we will have to cancel certain workshops, etc., based on enrollment. However, for the regular program, we really do expect all of those people who have submitted presentations, been reviewed and accepted, to show up or make arrangements for their presentations to be given. The submission rate for various Divisions has been high enough that we have to reject some quality work. It is a shame that there are rejections and yet some accepted works are not presented. I know that people get ill at the last minute, have family crisis, etc. However, when someone signs the proposal and agrees to present, he/she needs to follow through. The Board of Directors has been continuing discussion about how to be supportive of our membership and yet deal with this issue. If you have suggestions, we welcome them!

A couple of years ago the Board of Directors asked Terri Strand to develop the history and archives of MWERA. We knew that there were records in many places, and that we needed to pull this together before we got too much further along in our development. Terri has done an outstanding job of gathering materials, organizing, archiving, and establishing a system for retrieval of key documents. The Board of Directors recently received a report from Terri, and we anticipate that you will be hearing more about this in the near future.

The Association Council may also be meeting at AERA. We are working on dealing with some important By-Laws changes, and may need the time to finish this up, although I am hoping we will be done before then. The change in the By-Laws that we are considering has to do with moving the election of the Vice President-Elect ahead by one year, bringing that person "on board" a year earlier. As you know, the Vice President is in charge of the conference program. This is a huge job. Currently, the election of that person happens a year in advance, and when he/she is VP-Elect, that year is used for learning about how the organization works, and planning for the conference. There is very little time, actually, as conference planning goes, to get on board and make plans. Let me use this year for an example. Tom Parish was elected in the spring of 1996. His first Board meeting and conference was this past October. He had a couple of weeks following the meeting to get his program committee organized, get his call for papers done, and plan his main speakers. He reports to the Board in January, and we move ahead to deal with issues from there, for him to have the 1997 meeting in place. Tom is new to the Board, and there are a great many procedures and policies for him to learn and implement in a very short period of time. I know that he will work very hard on this.

The proposal for the change would have elected Tom the year before, using the example, in 1995. That would allow him more time to plan, to meet with the Board, to lock in speakers, to go to AERA to meet with people, etc. It would also give the membership more of an opportunity to know who they were working with, and to make plans for meetings that best met the multiple needs of our membership.

At the Association Council meeting there was some discussion about changing the By-Laws so that we eliminate the position of President-Elect, or have the President-Elect be the program chair. I am not in favor of either of these because it puts MWERA at risk. The President is the person who is ultimately in charge of the financial affairs of the organization. The President must work with the Executive Officer, and oversee the expenses of the program chair. If the position of program chair moved to immediately (later in that program) become the president, he/she could potentially spend whatever he/she wanted to and then sign off on it! We could potentially ruin the organization in one swoop! I cannot and will not support this position. Some people asked me this past year what I did as President-Elect. There are a lot of things that the Board oversees on an ongoing basis, and a lot of things that have to be taken care of for the program. The President-Elect ends up doing a great many small, but important jobs for the organization. I never realized how many things there were to be done!

A few years ago, when we knew that Charles Anderson would be stepping aside as the Executive Officer, we all worked hard at trying to make the transition go smoothly. There were many policies and procedures that had been in place, but were not written down. Additionally, the organization was growing at a tremendous rate, and many new members probably had no idea about the day-to-day operations (nor did they probably want to know)! I have worked with previous presidents and Charles to draft a policies manual. The current Board of Directors is working to refine that manual. When we are done, we will have a working document that should be helpful for our membership and future leaders to keep the organization running in the professional, well-developed manner that it now works.

The Association is you, the membership. I am delighted to have the opportunity to serve you, and to try to meet your needs. I am hoping that you continue to provide input to all of your elected officers, and will be patient as we move ahead with trying to help the organization grow. I am also hoping that you will take this opportunity to share the call for proposals with others, and to bring new members into the association. We know that our membership joins us because other members take the time to share, to tell about MWERA, and to encourage others

I wish you the best for a great year, and hope to see you soon!

AERA Annual Meeting Information

MWERA Association Council Meeting

Wednesday, March 26, 1997

8:15 - 10:15 a.m.

Addams Room, 3rd Floor, West Tower

Hyatt Hotel

MWERA Reception

Thursday, March 27, 1997

7:00 p.m.

Erie Room, Level 2

Sheraton Chicago Hotel and Tower

Conference Highlights

Mid-Western Educational Research Association 1996 Conference

Kim K. Metcalf
Indiana University

The Holiday Inn at Mart Plaza, Chicago, played host to the 1996 annual conference of the Mid-Western Educational Research Association. The 1996 conference, in addition to the new hotel, featured a variety of expanded session formats and offered both first time conference attendees and returning MWERA members the opportunity to experience research, scholarship, and ideas from a wide range of topics.

Three noted educational scholars were featured across the 3 ½ days of the conference. Dr. Herbert Walberg, research professor at the University of Illinois - Chicago, was featured in the opening Wednesday evening session. Dr. Walberg's presentation on educational productivity provided an interesting, thought-provoking, even unsettling contrast to speakers featured at MWERA conferences in recent years.

Dr. Carolyn Evertson of Peabody College at Vanderbilt University provided the Thursday morning keynote address. Dr. Evertson, widely recognized for her research, on classroom management and effective teaching, addressed her most recent line of scholarship in which she examines what it means to "teach for understanding." Her work with teachers in the Nashville area and with the Blue Ribbon Schools panel provided the context within which she has discovered much about the unique approaches and ways of thinking required by teachers when they attempt to help students understand content at higher levels.

Friday afternoon's luncheon speaker was Dr. Mary Kennedy of Michigan State University. Dr. Kennedy's most recent work and that on which she spoke focused on innovative ways of analyzing, organizing and reporting qualitative data on teachers' thinking.

In addition to notable speakers, the 1996 conference featured a much expanded series of round table presentations. The new facilities at the Holiday Inn enabled over 65 authors the opportunity to spend extended time explaining their research to interested individuals and interacting with those individuals about the specific aspects of their work. Invited speakers and special sessions included a panel discussion by past MWERA presidents, an intriguing discussion of successful educational researchers by Ken Kiewera, "The Virtual Library" by Molly Nicaise and Humphrey Loe, and a "Meet the Editors" session with the incoming editors of the *Mid-Western Educational Researcher*.

Attendance at this year's conference was surprisingly high in light of the numerous changes from past years. In addition to moving from the Bismarck to the Holiday Inn, MWERA members dealt with a substantially earlier deadline for proposals and conference dates approximately one week earlier than in past years. Among the most exciting highlights of this year's conference was the surprisingly large proportion of proposals submitted and presented by first time MWERA conference participants. Roughly 60% of all conference presentations were made by authors who had not before attended or participated in an MWERA conference.

Conference Program Chair, Kim Metcalf, repeatedly expressed his thanks and appreciation to the many individuals who helped make the 1996 conference a success. Dr. Tom Parrish, Program Chair for the 1997 Conference, invites individuals interested in assisting in preparing next years program to contact him directly.

MWERA Past Presidents

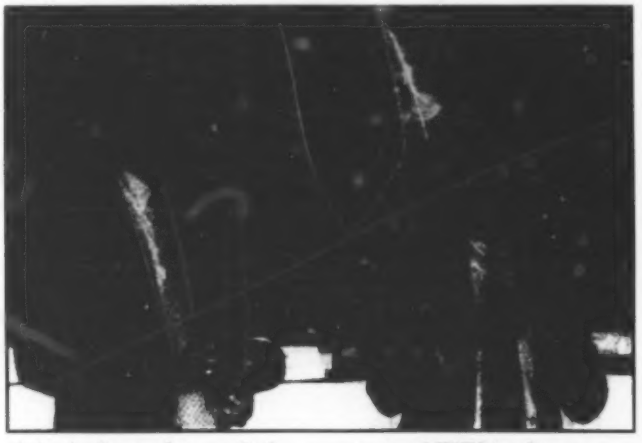
(from left) Ayres D'Costa, Ralph Darr, John Kennedy, Jean Pierce, Ken Kiewera, Isadore Newman, Richard Pugh, Greg Marchant, Tom Andre, Charles Anderson

Vice President Kim Metcalf and staff

Sharon McNeely, President-Elect and Isadore Newman, Past President

Carolyn Evertson, featured speaker, and Greg Marchant, MWERA President

Tom Parish, Vice President-Elect



John Surber and Ayres D'Costa, outgoing MWERA editors (Susan Brookhart, not shown)

Charles Anderson, Executive Office Emeritus, and Jean Pierce, MWERA Executive Officer

Mary Kennedy, featured luncheon speaker

1031

Presidential Address

Top 10 Issues Facing Teacher Education

Gregory J. Marchant, Ball State University
with Gary Griffin, University of Arizona

For efficiency of reading and clarity, I have always appreciated articles that contain brief lists which in single statements encapsulate the main points of the article. Coming from Ball State University, the alma mater of David Letterman, I also have a certain predisposition to "top ten" lists. With this in mind, a little more than two years ago I sat down with Gary Griffin while meeting at Educational Testing Services in Princeton, New Jersey. A year later we continued the discussion of issues problematic to the education of teachers. What follows are the ten points we discussed that served as basis for discussion during my presidential address at this years annual meeting. I have added some possible approaches for each issue. I welcome your comments.

Number Ten: Negative public perceptions of the quality of U.S. education

Criticism of the U.S. public schools was documented in a *Nation at Risk* and hit extreme political tones during the Reagan and Bush administrations. Much of the well publicized decline in public education and its inadequacy relative to other countries was refuted in *The Manufactured Crisis* (Berliner & Biddle, 1995), and presented by David Berliner and Gerald Bracey at last year's MWERA annual meeting. Although this year's presentation by Herb Walberg echoed the old themes of the generic woes of public education, those findings were again questioned by the audience. Regardless of whether our schools are in academic disrepair or not, the impact of the perception is evident. The status of teaching, teachers, and teacher education has taken a beating. Universities often view schools of education as cash cows with high enrollment, but low scholarly value. Concern has been raised over the quality of college students attracted to the field and the quality of their teaching when they graduate. Funding and policy decisions in education often reflect more of a punitive than a supportive approach.

***Possible approach**: Teacher education programs should exercise damage control over misinformation about our schools and teaching. Sound educational theory and research should be used to inform those inside and outside of education as to the real problems and likely solutions. Teacher education programs need to be the banner wavers for what is good about teaching and teacher education.*

Number Nine: Lack of foundations in education

Education as a field has history and philosophy; a foundation. For those who make the field their career this foundation should be part of their knowledge base. Unfortunately, far too often everything old is new again without the insight that the old has been tried. Dewey is rediscovered without the knowledge that he was discovered in the first place. Teachers need to be able to reflect on why they use or should not use certain approaches. Foundations in education provide foundations for professional decision making.

***Possible approach**: Reverse the trend of reducing and eliminating foundations courses. Better still, infuse foundations issues throughout the teacher education curriculum.*

Number Eight: Lack of teacher/scholar orientation of college faculty

Few, if any, colleges support a true teacher/scholar model even in a traditional sense, let alone in the Ernest Boyer *Scholarship Reconsidered* sense. Quality teachers are dismissed from universities due to lack of scholarship (research and publication), and conversely research is not expected or rewarded at some colleges emphasizing teaching. Undergraduate education students are often left with few, if any, models of inquiring, reflective, innovative, quality college teachers. Without these models, education students are left to conceptualize action research and reflective practice on their own and often after they leave the teacher education program.

***Possible approach**: Colleges and universities must reconsider their notion of scholarship and give more than lip service to the types of models they wish to support. College faculty will not and should not involve themselves in activities which will leave them without a future in the profession. Colleges need to recognize and reward the teacher/scholar model.*

1032

Number Seven:
Student prior knowledge and experience

There are few things that a college student has more of than experience as a student. This is both a blessing and a curse. The knowledge and experience gained as a student can serve as the basis for considerations of teaching and learning. Reflecting on past teaching and learning experiences can be a useful exercise. However, this knowledge and experience may also set expectations and biases. Often education students feel they know how students learn best because they know (or think they know) how they learn. They feel they know how they should teach because they know the kind of teachers they liked. Their subjective interpretations of teaching and learning can undermine efforts to provide contemporary approaches that take into account a variety of aspects of learning.

***Possible solution**: Challenge the education students' conceptualizations of teaching and learning with examples and simulations. When appropriate, college courses should model alternative effective teaching approaches rather than rely on lectures.*

Number Six:
Failure to experience meaningful diversity

A college course in multicultural education does not begin to deal with the issues of diversity that teachers face. This is often the extent to which diversity issues are addressed, if at all. Teaching is about dealing with diversity; twenty or more children, all with different backgrounds, creating different constructions of the world. Teachers try to find the right connections and bridges to help children learn. Central to that task is understanding the variety of worlds the children come from and the different forms the connections and bridges might take.

***Possible approach**: Consider diversity as a theme running throughout teacher education: diversity in familial and cultural background of children, diversity in learning and learners, diversity in teaching and teachers.*

Number Five:
Inadequate and inappropriate field experiences

Education students have long held field experiences, especially student teaching, in high regard. This respect has often come at the relative discrediting of college course work in education. The field experiences tend to be viewed as the real world, and course work viewed as information to be memorized for a test. One possible suggestion is that courses need to be more practical; however, another implication might be that education students face too many inconsistencies in field experiences without the support to make connections to course work. Specifically, education students are usually asked to observe in classrooms without knowing what or how to observe. Brief unguided exposure to certain types of classrooms, such as urban and inclusion classes, can do more to reinforce stereotypes than to provide insight. The amount of involvement and responsibility expected in practicum placements can vary greatly, as can teaching approaches (and potentially the quality of teaching) of the cooperating classroom teacher. The amount of responsibility that the college assumes for the training and monitoring of cooperating teachers varies, but in most cases is minimal.

***Possible approach**: The number of field experiences may need to be increased in most teacher education programs. These experiences need to be better structured, strategically planned, and monitored for quality and content.*

Number Four:
Student maturity

In few other fields, does the trip from high school student to a fully functioning professional occur in four short years. Education students must mature in terms of ability to comprehend the multitude of complex variables necessary to make professional teaching decisions and must be able to assume a level of responsibility unheard of in other fields. Developmental psychology and personal experience tell me that the typical college undergraduate may not be ready for much of what we are attempting in most teacher preparation programs. The Holmes Group recognized the need for a firm foundation in an undergraduate major prior to teacher education, and Martin Haberman has repeatedly called for alternative teacher certification programs as a means of attracting more mature, experienced people to teaching. Economics suggests that the expectation of significantly longer training prior to employment in teaching may not be a practical solution, and alternative certification programs have demonstrated limitations that make them less than desirable.

***Possible approach**: Teacher education programs must be carefully structured to give undergraduate students knowledge and skills, but especially experience; because these students must not only gain knowledge and skills, they must "grow up" and gain professional experience. Teacher education programs should also adopt a role in the continued professional development of the teachers they produce, especially for the first few years they are in practice.*

1033

Number Three:
College turf and tradition

College courses are traditionally viewed as the income generating properties of college departments, the currency being student credit hours generated. Because jobs and power are often at stake, battles and compromises are made with great concern by departments. The political battles to get and keep courses are legendary in some colleges. Illogical arrangements and ownership of courses are frequently explained with history rather than with what is best for the education student.

***Possible approach**: Reevaluate the teacher education program strictly in terms of how the education students might be most efficiently and effectively developed into quality teachers, then look at the real limitations of the college rather than the other way around (i.e., with these limitations, what can we do?).*

Number Two:
Discrete courses

In contemporary elementary school curriculums, subject areas are often linked and integrated through thematic instruction and reading or writing across the curriculum. Increasingly, secondary curriculum is being thought in terms of blocks of time and related subjects with team teaching taking place at all levels--all levels, that is, except the college level. At the college level curriculum continues to be thought of in discrete units of courses, taken once and possibly forgotten. Two themes which have consistently emerged in professional education standards are learning and development. Yet, these are areas that are typically offered as *a* course offered early in the teacher education program (these are also the courses which are on the chopping block at many colleges). Other areas of importance receive much the same treatment, if offered at all. It is not unusual for courses in multicultural education, special education, and reading to be offered once, if at all, in the teacher education program. The inherent message to education students is to learn what is needed for the course (which may or may not be related to anything else in teaching or learning), pass the exam, and move on to the next course. Little coordination exists across departments and sometimes even across courses within departments, leaving some content ignored because it is assumed to be covered elsewhere while other content may be redundant. The end results are programs that are fragmented with no overall sense for the development of the future teacher.

***Possible approach**: Open up lines of communication and coordination within and across departments. Administration needs to be open to providing compensation for coordination time and to be willing to recognize these efforts within the reward system. Colleges need to consider blocks of courses and the integration of areas across the program with teams of instructors working with cohorts of education students. Among other things this will help build accountability for the overall program and the teachers it produces.*

Number One:
Failure to understand the nature of the teaching-learning process

Although I receive much gratification from student comments concerning how my course in educational psychology helped them, I also feel some satisfaction when students inform me that they are changing their major from education because they hadn't realized what all was involved in teaching. The teaching-learning process is very complex. Efforts to oversimplify the process do a disservice to the future teachers. Teaching is not a collection of activities or lectures. It is the interaction of form and content with learner constructions occurring within social contexts. It is curriculum, psychology, and sociology; to name a few. Lee Shulman once described pedagogy as the highest level of Bloom's taxonomy of the cognitive domain. This begins to get to the difficulty of the task of effective teaching. To successfully execute the task of teaching requires an incredibly high level of knowledge, skill, and reflection. To be a good teacher is a very difficult and time-consuming endeavor; to be a great teacher, a master teacher, requires a competent experienced individual at the top of the profession. In the teaching of educational psychology we often discuss the conflict between the breadth of content we need to cover versus the need to cover concepts with a level of depth that is meaningful for the education students all within a three-credit hour course. The answer, of course, is simple (actually simply impossible): we must do both, but we can't.

***Possible approach**: Teacher education programs must be viewed not as a collection of courses, but as one step in the development of a good teacher. It is not the first step. Education students enter the program with a wealth of knowledge and experiences that will impact their ability to grow through the program. It is by far not the last step. Teaching must be viewed as a developmental process that continues throughout practice. Professional development must be viewed as internal rather than inservice offerings.*

A Brief Report[1]

Fulfilling Its Promise, a Content Analysis of 20 Years of Research at MWERA

Thomas Andre
Iowa State University

Abstract

Twenty years ago, an ethnographic research study of MWERA was initiated. A team of ethnographers, posing as educational researchers, began attending MWERA and engaging in participant - observation research. Artifacts, in the form of papers, and field notes on the interactions and activities of members were collected. The present paper represents an attempt to summarize the twelve major research conclusions that have emerged from that study.

Introduction and Method

This study reports a long term study of MWERA that I have been conducting. Starting at the first convention, I arranged to have ethnographic colleagues attend MWERA and pose as educational researchers. Over the past twenty years, this team has randomly and representatively sampled sessions from 95% of the meetings. Artifacts, in the form of papers, and field notes on the interactions and activities of members were collected. This study focuses on the relationship between presentations and the educational ideas they promote. It also represents a content analysis of the major conclusions of presentation given over that interval. The present paper shares the 12 most important results of this study with you.

Results

Listed below are 12 major conclusions from 20 years of research at MWERA.

Across the sample of papers obtained and examined:

1. 100% of presenters concluded that further research was needed.
2. 99.34% of MWERA research presenters failed to take advantage of successful instructional procedures they investigated or any successful instructional interventions to enhance the participatory experience of the audience in their session.
3. 88.34% of presenters that reported a non-significant finding that was in the direction of their hypothesis interpreted and discussed that finding as if it supported their hypothesis.
4. Only 14.72% of the researchers in the point above cautioned that the result was non-significant.
5. 86.95% of presentations that contain overheads had an overhead typed in elite or 10 point font that was impossible to read at a distance of more than 20 inches from the screen.
6. 82.2% of the presentations were self-described as reporting preliminary findings, apparently in support of conclusion 1.
7. 71.35% of presentations that contained no statistically significant findings orally reported significance statistics to 4 decimal places.
8. 70.70% of presenters brought fewer copies of their paper than recommended by MWERA. The number of papers brought was inversely related to the likely popularity of the topic.
9. In 68.34% of oral research presentation sessions, a researcher was in the middle of his/her method or results section and stated words to the effect: "One minute left?! But I am only in the method/results section!"
10. 58.23% of qualitative researchers said in their talk that qualitative research is about the specific cases it studies and is not intended to be generalized.
11. 88.3% of the researchers in the item above then discussed the transferability of their findings.
12. 34% of MWERA presenters did not look at their audience more than three times during their presentation.

Discussion

In honor of the twentieth meeting of MWERA, it seems appropriate that we consider the humorous aspects of our own behavior. While the serious nature of the research reported at MWERA is well documented, it is clear that occasionally laughing at ourselves clears our collective heads and provides a proper perspective in which to further pursue the goals of life, liberty, statistical significance, construct validity, or triangulation. With this I mind, the author wishes: Happy data to all and to all a good night!

[1]This paper is a pack of nonsense and lies that should only be used in the humorous manner it was intended. Any use of the present report in situations other than those intended by the author represents a serious ethical violation that may be investigated by the Guardians of Endore or the Fellowship of the Ring.

Voices from the Past

Deborah L. Bainer
Christine S. Halon
The Ohio State University, Mansfield

This year's annual conference of the Mid-Western Educational Research Association (MWERA) in Chicago was a milestone: the organization's 20th conference. Already, MWERA has a rich and productive history. The organization has established itself as a notable regional body committed to building collegiality, sharing and stimulating research interests, and mentoring graduate students and new faculty. While MWERA limits its efforts in contacting members to 13 midwestern states and Canadian provinces, its actual membership is spread throughout the United States, Canada, and other countries.

This seems like an appropriate time to reflect on MWERA's past, and to ponder the future. To identify benchmarks and aspirations of the organization, past presidents were contacted and asked to respond to two questions. Their responses are reported below.

1. What were the highlights or memorable events during your year as president of MWERA?
2. What suggestions "from the heart" do you have for the organization and its future?

Jean Pierce, 1983-84
Northern Illinois University

"Perhaps the most memorable event was the creation of an electronic forum for mid-western educational researchers, the first of its kind in the nation. The EdResearch Forum was located on CompuServe, since the Internet had not yet started to grow. The idea worked fine for a handful of MWERA members, but in 1983 computer networking was a few years ahead of its time. More use by network-literate researchers was needed to keep the space available to us. By 1985, EdResearch Forum came under the sponsorship of AERA. As Mid-West goes, so goes the nation!

"Periodically reexamining our mission and prioritizing our goals as an organization are crucial. Currently, a top priority is the mentorship of graduate students and new faculty. Perhaps we need to ensure that student voices are represented on decision-making committees. If the main goal is to create a feeling of stability and 'family,' then perhaps we should not put a lot of time and effort into membership recruitment, and we can consider five-year presidency track (Conference Co-Chair, Conference Chair, President-Elect, President, Past President). If a major goal is to promote communication and collaboration among researchers throughout the region, then we could make a stronger effort to ensure that members from a wide variety of states, provinces, and cultures are nominated for leadership positions. If a primary purpose is to promote the implementation of research in classrooms, more could be done to attract elementary and high school educators and to facilitate communication between practitioners and researchers."

John Kennedy, 1984-85
The Ohio State University

"I remember bringing the conference to the Bismarck Hotel in Chicago for the first time. The conference had been held in various places up until then. At that time it was easy to get accommodations in Chicago but the plane fares were expensive. Plane fares have gone down so it is now a tradition for MWERA to be held in Chicago.

"Also, I launched a membership drive that brought in some key people such as Bob Brennan, Isadore Newman, Don Cruickshank, and Ayres D'Costa. The conference that year was attended by about 250 people.

"MWERA should stay in Chicago. Furthermore, I encourage the organization to maintain its commitment to the presentation of data-based research. Avoid being overly enamored with newer non-empirical research strategies, as quality will suffer. Non-data-based research is like intellectual cancer: we have to live with it for a while, but eventually we must get rid of it. It must be contained and quarantined to limit the degree of its penetration. MWERA must keep, promote, and expand a forum that presents data-based research. Respect for MWERA will grow, unfortunately at the expense of AERA and other organizations, which are being clutched by vacuous, non-data-based research."

Isadore Newman, 1988-89
University of Akron

"I don't know if this is a highlight (to some it may be). As Program Chair, it was the first time I experienced total and complete academic panic. I totally closed down for a couple of hours. It was from this experience that I learned to be more appreciative and sensitive to what program chairs have to do and less critical of minor errors. I learned that people like Dennis Leitner, Ayres D'Costa and Greg Marchant are some of the most supportive people I have ever had the pleasure of working with. Another highlight was the conceptualization of the MWERA journal in its present format by Greg and myself. I believe it would not have come to fruition without the support of the Executive Committee, especially Dennis Leitner.

1036

"I think the MWERA is a wonderful organization to mentor students as well as new faculty into the research culture, introducing them on a first name basis to some of the leading figures in the world. I would like the organization to support these informal get togethers--dinners, conversations, and chat hours between such figures and our membership, especially new mentees."

Dennis W. Leitner, 1989-90
Southern Illinois University at Carbondale

"Sometime during my 'tour of duty,' I got tired of receiving the annual *billet-dous* (rhymes with 'bill-is-due') from our distinguished Executive Officer, Charles Anderson, requesting my annual dues. So I simply threw him a check for ten times the annual dues and told him to save the postage. If you know Charles, you know how much he anguished over where to put the money. After two or three years and a revision to the MWERA by-laws, we now have the opportunity for LIFETIME membership in MWERA and 37 people (as of October 1996) have taken advantage of it. Hopefully this will provide a type of financial security for MWERA for many years to come."

Ayres D'Costa, 1990-91
The Ohio State University

"MWERA has evolved through some little-publicized crises over the years, although its good qualities have persisted despite these crises or perhaps because of them. One MWERA crisis had to do with its journal. The old membership dues were insufficient to support a journal and it was also a newsletter. This issue had caused many a heated debate among Board members and prior presidents. During my tenure on the Board, we presented our needs to the membership and received strong support to increase dues and to continue support for a professional journal under the able leadership of the new editors, Isadore Newman and Greg Marchant.

"The money allocated to the Journal was usually not sufficient, and it was therefore up to the editors to find ways to supplement their budget. Incidentally, this was also a problem faced by incoming program chairs. It would seem that one of the skills needed by editors and program chairs was creative financing. Izzy found a supportive dean at the University of Akron, each of the two editors found other support in their respective departments, and a brand new journal concept was born. Incidentally, the idea of selling a cover photo and write-up to a university for a small fee was part of this creative financing scheme. Also emerging was the raising of money through publisher ads in the Journal and exhibits at the conference, a scheme that Sharon McNeely (current president) made successful through her contact work with publisher representatives.

"In my term as editor, I found similar financial support for the Journal, most prominent of which was Dean Zimpher's (The Ohio State University) grant to MWERA's journal. I hope that the concept of a professional journal will be embedded in MWERA and continue to receive support in the future. We deserve to hold our heads high among our professional communities, and our journal will help us do that.

"One of the endearing privileges I enjoyed as an officer of MWERA was the trust and support that I received from members and other officers. As Program Chair and later in another leadership role as President, there was never a concern in my heart that my motivation or dedication were ever questioned. Past presidents would come to tell me that they felt good about what we were doing for MWERA, and that a cardinal rule was for the old guard to give way to the new so that creativity was never stifled. This is the essence of my suggestions to the new Board. Develop this trust in your newer officers so that they can pass on this wonderful torch of faith to their colleagues. Trust will beget trust, and I pray that MWERA will remain small enough to retain this trusting and supportive environment as its primary organizational quality."

Barbara S. Plake, 1991-92
University of Nebraska, Lincoln

"I recall the transition of our research publication to the *Mid-Western Educational Researcher*, thanks in great part to the creative ingenuity of Isadore Newman and Greg Marchant. The quality and appearance of the publication improved dramatically!

"Also, we implemented a plan to encourage more participation by graduate students in the annual business meeting. We offered a free year of membership through raffle at the business meeting with the goal to encourage more graduate students to attend the meeting. However, the person whose name was drawn wasn't at the business meeting! It seemed counter-productive to the goal of encouraging more graduate students to attend the meeting to award the prize to someone who wasn't in attendance. But we did anyway!

"What sticks in my mind about the organization is the people who constitute the organization. So many supportive folks! During my term as an officer, I suffered some very severe family crises and the members of the organization were wonderfully supportive and helpful. One time the Board of Directors met in Lincoln, Nebraska, in the dead of winter to accommodate my restrictions on travel due to family constraints.

"I like to encourage my graduate students to attend the meetings because I know they will be treated with respect and they will get an excellent orientation into attending and presenting at conferences."

Ken Kiewera, 1992-93
University of Nebraska, Lincoln

"What was most memorable was organizing the conference with the Executive Committee. We made some changes and tried some new things. Typically, we had a keynote speaker and guest speaker. We wanted to have a slate of invited speakers so we invited Carol Ames, Michael Pressley, and Joel Levin. It's nice to see that many of the new things we tried have continued. Also, I had a hand in assembling a

team of editors and I felt really good about that. They did a great job of taking over the responsibility from Izzy.

"We should keep MWERA our own. We should keep it intimate, unassuming and down-home. It's a place for grad students the cut their teeth. On the other hand, we need to bring in the Big Guns, the role models who will both inform and inspire us. I remember my having a beer with Michael Pressley in the lounge and learning so much about his work. I like that we're concerned about taking care of 'our own' but we need to get a sense of prominent ideas that are out there and how the people behind these ideas go about doing their work. MWERA is where we rub shoulders with the big names in our field."

Richard Pugh, 1993-94
Indiana University

"My memories of my year as President are many and were very professionally rewarding. The number-one highlight during my year as President was launching the historical study of MWERA. I remember writing the RFP and publishing it in the *Mid-Western Educational Researcher*. I remember appointing a review committee to consider the proposals which we received. I remember notifying Terri Strand that her proposal was the one selected by the Review Committee. The presentation from the study by Terri at the recent annual meeting and the scheduling of a symposium on the historical study followed.

"The second event that I remember the most was receiving a phone call from Charles Anderson one day. He called to tell me that he had become ill and could not continue as Executive Officer. After our conversation, it was evident that we needed to move ahead and identify a new Executive Officer. I gave a sigh of relief when I checked the by-laws and found that the MWERA constitutional representatives had anticipated such an event and had included in the by-laws the procedural steps for identifying an Executive Officer. Following these procedures, the President and MWERA were permitted to move smoothly through the process of appointing Jean Pierce as the new Executive Officer. I wish to thank the constitutional representatives who had developed the procedures and thank Jean Pierce for accepting the offer and skillfully handling a transition period as the responsibilities shifted to her.

"My suggestions 'from the heart' are to keep the invited speakers in the program. They are the standard-setters. Keep the sessions which fall under the category of social: the Cracker Barrel, President's Reception, and luncheon. These are part of the MWERA icon. Finally, always try new things at the annual meeting. Take a chance; be a risk taker!"

Thomas Andre, 1994-95
Iowa State University

"The major event was the change in hotel. The Bismarck had been our home and, more importantly, offered cheap hotel rates in the downtown area. As MWERA is a second and unfunded conference for many people, keeping the expense down was important. Many people had strong feelings for the nostalgia of the Bismarck, but others viewed it as a run down sleaze pit. Thus the change was accomplished with much soul-searching. It turns out to have been a good decision, especially since the Bismarck is closing, I hear.

"The IRS-tax fiasco was also a traumatic experience. Essentially we thought we might be liable for considerable back taxes. As it turned out, we had tax exempt status all along. The import, maybe, of the event was, don't worry too much until you are sure of the facts.

"The most memorable events of the past few MWERA conferences for me have been the quality of the invited speakers. Mike Pressley, Joel Levin, John Bransford, Jere Brophy, Carol Shakeshaft, Carol Ames, Robert Slavin, and many others have given exceptionally fine talks which extend the memberships' knowledge about currently important events and issues in educational research. After the trials and tribulations of committee meetings, faculty meetings, territorial battles, and the other minutia of faculty life, it is nice to be reminded of the intellectual elegance that attracted one to this profession."

Greg Marchant, 1995-96
Ball State University

"Six years ago the first issue of the *Mid-Western Educational Researcher* was published as a journal instead of a newsletter. Isadore Newman and I took on the task as editors to create a journal that contained articles and features that would be 'user-friendly' to our membership. Three years later Ayres D'Costa, Susan Brookhart, and John Surber took the reins. It fell upon me, as my first major decision as President, to appoint the next editors. After careful review of proposals and approval of the Board of Directors, I appointed the team that produced this, their first issue: Deb Bainer, Richard Smith, and Gene Kramer.

"Probably some of the most memorable events for any MWERA President actually occurred two years earlier during the term as Vice-President/Program Chair. The conference which I organized two years ago included some of the biggest names in educational research and attracted over 400 members, the largest attendance ever for a MWERA annual meeting. It was also during that conference that the need to change hotels became solidified. It was gratifying to have the first annual meeting at the Holiday Inn Mart Plaza during my presidency, and for it to be such a success.

"I guess my suggestions for MWERA is not that different than those I would have for any organization, department, or group. Know and respect your history, but dare to be bold in new attempts. Work to facilitate inclusion, rather than practice exclusion. Trust people to do their best and what is right until they prove otherwise. Never underestimate the possibility that things can go wrong; but if it isn't broken, don't fix it. Remember that people are people, to be respected as professionals and cared for as friends. I believe that MWERA already operates with these suggestions in mind. It is my hope that the Association will continue to attract members who will carry on this tradition."

1038

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Mid-Western Educational Researcher

Call for Manuscripts

The *Mid-Western Educational Researcher* is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews, theoretical and methodological discussions that make an original contribution to the research literature, and feature columns. There are four issues of the journal published annually.

The journal is now accepting manuscripts for review and possible publication in 1997 and beyond. Manuscripts are submitted to blind reviews by at least two researchers with knowledge of the literature in the appropriate area. Furthermore, the editors will review the manuscript and make the final decision. The review process requires approximately three months.

Manuscripts are accepted from faculty, students, and professionals working in non-educational settings. Membership in the MWERA is not required in order to submit a manuscript for review. The editors encourage the submission of revised papers that have been presented at the annual meetings of the MWERA, AERA, and other professional organizations.

Submit four (4) copies of the manuscript with a cover letter to Deborah L. Bainer (see address in left margin). Manuscripts should conform to the style and format described in the *Publication Manual of the American Psychological Association*, 4th edition. All manuscripts should be typed, double spaced, on 8 1/2 x 11 paper with 1 1/2 inch margins on all sides. An abstract of less than 100 words should accompany the manuscript. The author's name and affiliation should appear on the title page only. Submissions typically are less than 20 pages in length. If the manuscript is accepted for publication, the author(s) will be asked to provide a disk file (WP 5.1 or higher on a 3 1/2 inch high density IBM formatted disk) as well as a printed copy of the final version. Please note that the editors reserve the right to make minor modifications in order to produce a concise and clear article.

Questions regarding the journal or the submission of feature columns should be directed to the editors.

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1039

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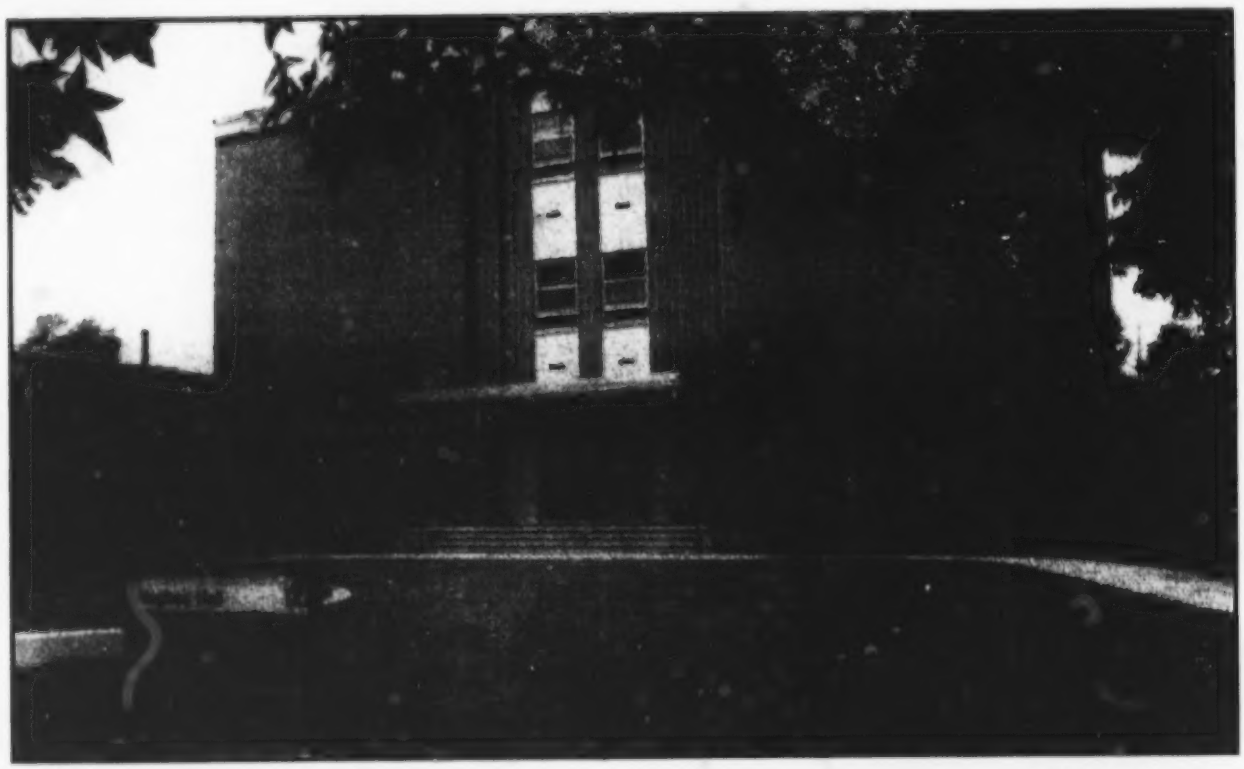

Pittsburg State University

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On the Cover

Pittsburg State University, located in Pittsburg, Kansas, is a comprehensive four-year university offering a wide range of bachelors, masters, and specialist degree programs. Pittsburg State enrolls approximately 6,500 students in five areas: the College of Arts and Sciences, the School of Education, the Kelce School of Business, the School of Technology, and Graduate Studies and Research.

The photograph on the cover shows Hughes Hall, the home of the PSU School of Education. The facility houses a new, state-of-the-art interactive distance learning classroom and well equipped computer laboratory facilities.

The training of teachers and administrators has been an important mission for the University since its founding in 1903. PSU was first a normal school and then a teachers' college before becoming a university in 1977. Today, the School of Education annually credentials approximately 200 EC-12 teachers, 25 school administrators, and a number of school counselors, school psychologists, special education directors and other school and agency personnel.

The PSU School of Education is accredited by the National Council for Accreditation of Teacher Education.

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Deborah L. Bainer, *MWER* Co-Editor
1680 University Drive, Ohio State University at Mansfield, Mansfield, OH 44906

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A Field-Based Introduction to Urban Education at the Middle School
Susan M. Brookhart, Duquesne University
2

Elementary Teachers' Pedagogical Content Knowledge of Mathematics
Roberta A. Fuller, University of South Florida
9

Book Review
Dismantling Desegregation
Joseph Watras, University of Dayton
17

1997 Conference Program Highlights
19

Explorations of Preservice Teachers' Learning Strategy Use
M. Kay Alderman, University of Akron
Loretta Wilkinson, Northeast Ohio Universities College of Medicine
23

Presidential Address 1995
Minds-on and Hands-on Activity: Improving Instruction in Science for All Students
Thomas Andre, Iowa State University
28

Conversations in Education
From Tourists to Citizens in the Classroom: An Interview with H. Jerome Freiberg
Mary R. Sudzina, University of Dayton
35

The Mid-Western Educational Research Association Gift Membership
39

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A Field-Based Introduction to Urban Education at the Middle School

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Abstract

Middle school teachers developed objectives and suggested activities for a pilot early field experience to introduce freshman teacher candidates to urban education at the middle school level. This paper presents these objectives and activities plus data about the effects of their use by 15 teachers and 22 freshmen; an additional 30 freshmen placed in a traditional (tutoring) early field experience formed a comparison group. Project freshmen demonstrated higher sense of personal teaching efficacy and flexibility among people in a multicultural setting. In their journals, project freshmen reported more awareness of the urban environment; however, comparison group freshmen were more likely to report a sense of accomplishment. The project experience seems to have provided a "big picture" introduction to urban education, while the traditional experience gave students a taste of success at one small teaching task.

The needs of urban schools have made headlines, prompted national and state funding initiatives, and caused changes in teacher education requirements, especially in the area of multicultural education (Houston & Newman, 1982). School-university collaboration can be a powerful strategy for educational renewal (Sirotnik & Goodlad, 1988). Because of the high priority of both collaboration and urban education in the field at the present time, there is a sizeable descriptive literature on these topics. However, educators are just beginning to develop a research base in these areas. This study contributes to that research base.

Changes in current field experiences are necessary in order to better prepare teachers for urban settings (Meade, 1991). This project had practicing teachers at an urban middle school design objectives and activities to help freshmen at an urban university learn about "understanding what it means to be committed to education," as the principal remarked. The rationale behind this collaborative project was that the teachers' collective expertise was an excellent source for an answer to the question, "What should entering teacher candidates see, do, and learn in an early field experience?" Desired student outcomes included professed willingness or desire to teach in an urban setting, understanding of culturally diverse pupil populations, and appreciation of methods and teaching skills appropriate for urban middle school pupils.

This paper reports on the project's effects. The study was guided by the following research questions:

1. What objectives and activities did the urban middle school teachers design for the early field experience?
2. What were the (a) level of commitment to teaching, (b) willingness to work in an urban setting, (c) sense of teaching efficacy, and (d) flexibility in a multicultural setting among freshmen who participated in the collaborative program? Did these levels differ from freshmen who participated in the regular field experience, a tutoring assignment in the same district?
3. What learnings/benefits and difficulties/problems did the collaborating teachers report, after the early field experience project, for (a) the participating freshmen, (b) the middle school pupils, and (c) the teachers themselves? What did the freshmen describe as their learnings and difficulties?

Until the mid-1970s, early field experiences were not very common (Houston & Newman, 1982). Students were not placed in the field until student teaching. Early field experiences are now quite common, both for the professional training they offer and for their usefulness in career guidance. In many places, they are required for licensing the teacher education program. In principle, students can decide whether they really do want to be teachers and can begin to develop professional skills.

But early field experiences differ considerably (Applegate & Lasley, 1983), and the substance of field experience is more important than the length of time spent in the field (McIntyre, Byrd, & Foxx, 1996). School-university collaboration is not as common at the early field experience level as at the student teaching level (Sirotnik & Goodlad, 1988). Therefore, the first research question called for a simple description. It was instructive to find out what successful urban middle school teachers defined as the important "first points" to introduce to freshmen and how they proposed to proceed.

The effects of early field experiences on general attitudes are positive (Samson, Borger, Weinstein, & Walberg, 1984). Preservice teachers expect to gain practical insights and enjoy student contact during early field experiences (Applegate & Lasley, 1983). It is not clear what effects, if any, early field experience has on career choice (Anderson, 1987; Willems, Brown, & Arth, 1982). There is evidence that multicultural content courses effectively change both knowledge about diversity and attitudes toward persons who represent various racial or ethnic groups (Bennett, Niggle, & Stage, 1990).

Two studies reported the effects of school-university collaborative urban teacher training programs at the student teaching level on willingness to teach in an urban setting. McCormick (1990) reported 47% of graduates of one midwestern university who had participated in the Cooperative Urban Teacher Education Program in Kansas City were currently teaching, and 46% of those were teaching in cities of more than 50,000 people. Stallings and Martin (1988) reported that urban Teaching Academy graduates were more likely than comparable graduates of

1044

the regular teacher education program to want to teach in an urban setting. This variable, willingness to teach in an urban setting, is also important at the career choice level and is appropriate to examine in the early field experience.

Sense of teaching efficacy has been included as a variable in this study. There is evidence that teachers who expect their teaching to make a difference in student learning are those who are, in fact, effective teachers (Ashton & Webb, 1986). Teachers who do not believe they can make a difference are not likely to trust students or support student problem-solving, but they are likely to believe that external rewards are necessary to control student behavior (Woolfolk, Rosoff, & Hoy, 1990). These beliefs are antithetical to a classroom environment where all students can maintain dignity and develop self-esteem. One reason urban teaching may be difficult is that it is hard to develop a sense of teaching efficacy in the face of urban poverty and alienation. One of the goals of this early field experience was to expose students to committed urban teachers, to help develop commitment and a sense of efficacy among the teacher candidates.

Method

Sample

The urban middle school chosen for this study was selected because it had an enthusiastic teaching staff and principal and a diverse student body, and it was located in an inner-city neighborhood near the university. The school served about 860 students, approximately 60% African-American and 40% white, with a staff of 64 teachers and over 40 administrators and support staff. The investigator secured the commitment of the school principal before beginning the study.

In February, nine teachers and the investigator met for a two-hour workshop. The teachers volunteered to participate in the project and were compensated for their work. All had at least two years of experience at the school. The teachers did brainstorming, then prioritizing, and finally summarizing activities; the results were 3 objectives and 7 suggested activities for 22 freshmen Introduction to Education students who would make 10 2-hour visits (in March and April) to the middle school as part of their assigned course work. These freshmen constituted the project group.

The comparison group consisted of 30 freshmen enrolled in the same Introduction to Education course, who made 10 2-hour visits to other schools in the same urban district, Pittsburgh Public Schools. These students were placed mostly in fourth or fifth grades at elementary schools; the logistics of placement made it impossible to confine the entire cohort of freshmen to middle schools. All of the elementary schools in which the comparison group freshmen were placed had diverse student populations. For their early field experience, comparison group freshmen were assigned to work as tutors at the discretion of the host teacher or principal. Typically, freshmen would be assigned one or two students at a time and given a place in a hallway or empty room. The teacher would provide materials on which the pupils required remediation: stories or text chapters the pupils had difficulty reading, homework or worksheets the pupils could not complete, and the like. The purpose of most of the comparison group's tutoring assignments was to help the pupils keep up or catch up with the class, or at least to make progress in that direction.

This study thus had two samples: (a) 15 middle school teachers, 9 of whom designed the project field experience (8 white and 7 minority, 11 female and 4 male), and (b) 52 freshmen enrolled in Introduction to Education who were assigned a field experience in a large urban school district (51 white and 1 minority, 44 female and 8 male).

Data Sources and Analysis

Data to answer the first research question consisted of the newsprint brainstorm sheets used in the teacher workshop and the summary objectives and activities on which the teachers agreed. The brainstorm session was driven by the questions: "What should entering teacher candidates learn in an early field experience in an urban middle school?" and "What activities and experiences should help them accomplish these objectives?"

Data to answer the second research question included quantitative indicators of (a) level of commitment to teaching, (b) willingness to work in an urban setting, (c) sense of teaching efficacy, and (d) flexibility in a multicultural setting. The freshmen responded to paper-and-pencil surveys before and after their field experience; 50 provided complete enough data for analysis. The commitment and willingness indicators were single items on the Entering Teacher Candidates Survey (Freeman, 1983; West & Brousseau, 1987). The efficacy measures used were two scaled items, measuring general and personal teaching efficacy, respectively, developed by the RAND corporation (Ashton & Webb, 1986; Berman & McLaughlin, 1977; Woolfolk et al., 1990). The measures of flexibility in a multicultural setting were two five-item scales (Flexibility in Instruction and Flexibility with People) developed for this study from the Edwards Personal Preference Scale (Edwards, 1953). Reliability (alpha) for the Flexibility in Instruction scale was .80 for the pretest and .82 for the posttest. Reliability for the Flexibility with People scale was .72 for the pretest and .87 for the posttest. Each of the scaled indicator variables was analyzed with a two-factor, mixed design ANOVA: factors were time (pretest/posttest) and site (project site/other site). Multiple choice indicators were analyzed with chi-square tests of homogeneity by site.

Data to answer the third research question came from verbatim transcripts of audiotaped exit interviews of the 15 middle school teachers and from written field site logs the freshmen were assigned to keep. Content analysis was done by category of comment (learning/benefit or difficulty/problem) and category of reference (teacher, freshman, or middle school pupil), thus forming six cells for analysis. Within these categories, subcategories were developed using the constant comparative method (Glaser & Strauss, 1967). Two researchers, the author and a graduate assistant, coded the data and discussed discrepancies to achieve consensus.

Results

Objectives and Activities

Table 1 shows the objectives and activities the teachers planned. These objectives are notably broad and comprehensive. The teachers were concerned that students experience interpersonal relations with a diverse group of pupils, and they listed this as the first and most important objective. Additionally, they wanted students to be introduced to some instructional, practical, and management concepts. These teacher-written objectives are remarkably similar to the recommendations of Meade (1991) for reshaping the clinical portion of teacher education to better prepare teachers for urban settings.

Table 1

Objectives and Activities Planned by Nine Teachers for introducing Early Field Experience Students to an Urban Middle School

Objectives:

1. The early field experience candidate will recognize the importance of genuine concern for each student as a person and participate in interactions with students.
2. The early field experience candidate will observe the organizational aspects of the school and teaching and the relationship of organization to content area proficiency.
3. The early field experience candidate will have some "hands-on" experience in the classroom, including an orientation to the concept of discipline with dignity.

Suggested Activities (a partial list of things the early field experience candidates might do to achieve these objectives):

1. observe different classes and students in different groups, make anecdotal notes
2. make notes on teacher-student interactions
3. observe an academic class, noting the objective on the board, classroom activities, and student reactions
4. make a list of possible ways to handle discipline in a positive way
5. keep a journal of observations of positive discipline
6. tutor an individual student or a small group
7. assist in the classroom, then get feedback from the teacher and an opportunity to ask questions

What the teachers meant by "organizational" matters were the practical, daily, operational routines: taking attendance, grading, completing paperwork, scheduling, collecting and duplicating materials, etc. What they meant by "hands-on" experience was that the freshmen were to perform some of these functions, not just observe the teacher doing them. These clarifications came from the workshop session.

Outcome Variables

Level of commitment to teaching was high both before and after the field experience for both project and comparison group freshmen (Table 2). No differences were found for site, time, or their interaction.

Table 2

Level of Commitment to Teaching, Project and Comparison Group Students Combined

Item: Which of the following best describes where teaching fits into your current career plans?

Choice	Pretest	Posttest
1. Classroom teaching is the only career I'm considering	19 (40%)	19 (38%)
2. First choice of careers I'm considering	25 (53%)	25 (50%)
3. Has some appeal but not first choice	3 (6%)	3 (6%)
4. I do not intend to become a classroom teacher	0 (0%)	3 (6%)
Total	47	50

Willingness to work in an urban setting was low both before and after field experience for both project and comparison group freshmen (Table 3). There were no differences between project and comparison group responses for either pretest or posttest measures.

Table 3

Willingness to Work in an Urban Setting, Project and Comparison Group Students Combined

Item: Which of the following best describes the school setting in which you would prefer to work?

Choice	Pretest	Posttest
1. Inner city/Urban	4 (9%)	6 (13%)
2. Suburban	27 (60%)	24 (53%)
3. Rural	2 (4%)	2 (4%)
4. No preference	12 (27%)	13 (29%)
Total	45	45

Sense of teaching efficacy was measured with two items (Table 4). Sense of general teaching efficacy was measured by responses to "When it comes right down to it, a teacher really can't do much because most of a student's motivation and performance depends on his or her home environment;" the scale for this item was 1=strongly agree through 5=strongly disagree. Sense of general teaching efficacy was moderately high for both groups and unchanged after the field experience. Sense of personal teaching efficacy was measured by responses to "If I try really hard, I can get through to even the most difficult or unmotivated students;" the scale for this item was 1=strongly disagree to 5=strongly agree. Sense of personal teaching efficacy was high for both groups. This variable was higher after the field experience for the project group and unchanged for the comparison group, although the statistical significance of this interaction was marginal.

1046

Table 4

Means (Standard Deviations) and ANOVA Results for Sense of Teaching Efficacy

Site	Pre	Post	n
General Teaching Efficacy			
Other	3.89 (.8)	3.89 (1.1)	26
Project	3.74 (.8)	3.79 (1.4)	19
Effect for Site:	F(1,43) = .29		
Effect for Time:	F(1,43) = .02		
Site X Time	F(1,43) = .02		
Personal Teaching Efficacy			
Other	3.96 (.7)	3.89 (1.1)	26
Project	3.74 (.9)	4.16 (1.0)	19
Effect for Site:	F(1,43) = .92		
Effect for Time:	F(1,43) = 1.62		
Site X Time:	F(1,43) = 3.40, p=.07		

Note: Scale: 1=low, 5=high

Flexibility in a multicultural setting was measured with two different summated rating scales (1=never true of me to 7=always true of me) of five items each (Table 5). Flexibility in Instruction items included "I like to try new and different instructional methods," "I like to present the same classroom topics several different ways," and the like. Flexibility with People items included "I like to meet new people in school," "I feel comfortable in classes with people from different ethnic groups," and the like. Flexibility of both kinds was moderate for both groups of freshmen. Flexibility in Instruction rose slightly after field experience, in the same manner for both groups, although this main effect did not reach statistical significance. Flexibility with People rose slightly for project freshmen and dropped slightly for comparison group freshmen. This interaction effect also did not reach statistical significance. Since these effects were in expected and explainable directions and statistical power was low, they will be discussed. Conclusions should be avoided until results can be replicated.

Table 5

Means (Standard Deviations) and ANOVA Results for Flexibility in a Multicultural Setting

Site	Pre	Post	n
Flexibility in Instruction			
Other	25.54 (4.9)	26.81 (5.0)	26
Project	26.11 (4.9)	26.95 (4.4)	19
Effect for Site:	F(1,43) = .08		
Effect for Time:	F(1,43) = 2.11, p=.15		
Site X Time	F(1,43) = .09		
Flexibility with People			
Other	29.69 (4.0)	28.85 (5.8)	26
Project	29.74 (3.9)	30.95 (3.0)	19
Effect for Site:	F(1,43) = .85		
Effect for Time:	F(1,43) = .08		
Site X Time:	F(1,43) = 2.53, p=.12		

Note: Scale: 5=low, 35=high

Reports on the Process and Content of the Project

Teacher interviews. Comments from exit interviews with project teachers are summarized in Table 6. A category is reported if at least three out of 14 teachers made remarks to that effect. One teacher was dropped from the analysis because his interview transcript indicated he was a negative case. He had not implemented the objectives and activities for the program but rather had his students observe his classes. Only two of the remaining 14 teachers did not state directly that the project had merit, and all of the teachers made at least one favorable comment about the freshmen.

Table 6

Teachers (n=14) Report of Benefits and Difficulties of the Urban Middle School Early Field Experience Summary of Categories (and number of teachers reporting)

Learning/Benefits	Difficulties/Problems
For Teachers	
general "good" comments enjoyed helping freshmen begin a career(5)	scheduling (3)
help in class, get more accomplished, e.g. more cooperative learning, more time for other students (5)	one student per teacher (3)
no extra work (4)	more structure (3)
	better match of students to subjects (3)
For Freshmen	
overall "good" experience (12)	overwhelmed by student behavior (5)
conversations with cooperating teacher (6)	too young/ should be junior project (4)
opportunity to grow from "shy" to "comfortable" with setting (6)	too short a time (3)
exposed to "real" situation and variety of experience (4)	
opportunity to show enthusiasm/ work (3)	
For Pupils	
achievement up (9)	(none reported)
displaying enthusiasm, asking questions, feeling special (8)	
motivitated to turn in work (4)	

The benefits that the project teachers reported for freshmen were related to opportunities to interact with both the teacher and pupils. After a general "good experience" report, the most cited benefits for freshmen were the opportunities to converse with the teacher and opportunities to become comfortable in the setting. The opportunities for interaction with students were so great that five teachers reported their freshmen were overwhelmed at first.

Student logs. Freshman site logs were coded twice, once for what activities students reported doing and once for reflective comments. All of the 30 comparison group freshmen did observation and individual tutoring. Activities reported by project freshmen were more varied and reflected the range of activities listed above. Reflective comments were coded as

learnings/benefits or difficulties/problems for the freshmen; within these categories, particular learnings or difficulties arose as themes in the freshman logs. Table 7 presents a summary of the reflective comments.

Table 7

Students' Reflections on Their Early Field Experience Benefits and Difficulties, by Site

Theme	Project Group (n=22)	Comparison Group (n=30)
Learnings/Benefits		
observe pupil/teacher interactions pupils respond positively, respectfully to freshmen	21 (95%)	6 (20%)
confidence/ease in new situation	18 (82%)	15 (50%)
teacher a positive, directive force- understand city environs, city pupils, and cultural differences better as a result of the experience	13 (59%)	25 (83%)
interest in teaching	9 (41%)	13 (43%)
learn that teacher sets tone, directly affects learning	8 (36%)	0 (0%)
helped pupils learn	8 (36%)	23 (77%)
nurturing/understanding pupils	8 (36%)	8 (27%)
sense of accomplishment	7 (32%)	22 (73%)
observe pupils atypical of what freshmen expected in that grade	7 (32%)	13 (43%)
opportunity to observe "real world" situation	4 (18%)	25 (83%)
appreciate the need for patience	3 (14%)	3 (10%)
exercise authority	2 (9%)	4 (13%)
	1 (5%)	4 (13%)
	1 (5%)	2 (7%)
Difficulties/Problems		
disliked physical plant, esp. open classrooms	7 (32%)	1 (3%)
teacher not interested in freshmen, uncooperative	6 (27%)	0 (0%)
general uncertainty or nervousness	4 (18%)	11 (37%)
pupils disrespectful of freshmen	3 (13%)	2 (7%)
pupils nervous, uncertain about freshmen	0 (0%)	2 (7%)
freshmen unreceptive to teacher style/personality	0 (0%)	8 (27%)
No reflections	1 (5%)	5 (17%)

The differences in reported benefits between project and comparison freshmen fell into two general categories. Project freshmen wrote much more often than did comparison group freshmen about observing pupil/teacher interactions, receiving positive responses from pupils, and understanding the urban setting. This cluster of reflections is related to the observations of teachers (see Table 6), lending strength to the claim that one of the project's biggest contributions was the opportunity it gave freshmen to have positive interactions with pupils and teachers in an urban setting.

Comparison group freshmen wrote much more often than project group freshmen about a sense of accomplishment, helping pupils learn, or an interest in teaching. This cluster of reflections contrasts with the results for the personal teaching efficacy measure, which was marginally higher for the project group (see Table 4). The only group difference in reported difficulties was about the physical plant. The middle school had open classroom architecture. Seven freshmen, used to walled classrooms, did not like the open design.

Some comments from the project group's site logs illustrate how the project's objectives were addressed. The freshmen did have opportunities to recognize the importance of genuine concern for each middle school pupil and to participate in interactions with them.

- I had a talk with one girl about her grades -- she wasn't doing well and I gave her some "uplifting" words.
- I just kept telling him he could do it if he tries and that I was there to help him out.
- (from a science class) The kids seem to like to ask me questions...They wanted to hear what I have dissected in high school. They seemed fascinated that I dissected cats, sharks, and pigs.
- (from an English class) Today, I got up in front of the class, for the first time, to teach simple and complete sentences. I was really nervous at first, but began to feel more comfortable after a while. The kids weren't very responsive at first, they were hardly listening to me. I asked them to treat me with the same respect they would give Mrs. W.
- I went around the circle and listened to each one's opinion. I enjoyed hearing their comments and I think they did too. It made them feel important.
- Today was "Self Esteem Day" in the homeroom periods. I found this to be quite interesting...The students were more honest and less embarrassed than what I would have been at that age.
- (from a math class) The last day. It seems silly, but I feel kind of sad. I'd like to think I made a difference, not only in their math class, but in their lives as well...None of the students know it's my last day. I just hope they remember that mode is the number that occurs most often -- for some reason, they had trouble with that.

There were, of course, a few problems and difficulties reported. One particular teacher from the school had some difficulties with her own pupils as did the freshmen teacher candidates. But the log entries reflected that the freshmen saw the difficulties in the larger context of the whole school atmosphere, in which pupils and their development were important.

The freshmen also observed the organizational aspects of classroom work. The most frequent paperwork activity was grading papers, as might be expected.

- Mrs. C. gave me a pile of papers to correct...I was greatly horrified to see most of the students got D's and E's. There were a few C's, fewer B's, and no A's. I realize how different students are in inner cities [from where I went to school] and how much the teachers have to deal with.

- I think I graded too easy; I gave everyone A's. Mr. S. asked me why and I thought that being that all the drawings [diagrams of the circulatory system] were neat and all the labels were in the right places, it was only right to give them an A.

The paperwork assignments came in the context of ongoing classroom work in which the students had participated. In class on campus, students discussed pupil differences and the importance of not stereotyping pupils.

The concepts of discipline with dignity, respect, and classroom management in general were the topics of some of the most interesting freshmen log entries. Many of the freshmen were seeing new things; their own high schools, with contrasting climates, were fresh in their memories.

- Each student read aloud and I purposely called on those students falling asleep...it annoyed me to see students falling asleep [while I was teaching].
- The teachers I observed had control over the students because they were friends with them. One teacher I observed had a hard time with her students because she didn't treat them as friends. Most of the teachers work their control by establishing mutual respect.
- (during a period when a class was moved to accommodate testing) One boy slipped out a side door to leave before the bell. I went after him and brought him back.
- Two girls came to class arguing. Ms. Y. put them on opposite sides of the classroom to keep them from fighting. Ms. Y. taught the lesson for the day, then gave them the ditto sheets to work on. Just when Ms. Y. turned her back, the two girls started to physically fights. Immediately we broke them up. Three other teachers came over to help. After class, Ms. Y. said that she thought the fight (verbally) was over when she split them up, obviously it wasn't...Ms. Y. definitely has control over her class, even when a fight broke out between two girls. The students listened when she spoke, and they showed respect to her.

In this pilot project, the freshmen learned to see episodes of classroom management as opportunities to contribute to pupil development. The freshmen did non focus on "discipline" for its own sake, as do some early field experience students. Their logs showed the project freshmen thought misbehavior needed to be curtailed so that the pupils were respectful and respectable and so that classroom lessons could continue effectively.

Discussion

The field-based introduction to urban education at the middle school served to introduce freshmen to the urban setting and to the complexities of the urban classroom. The comparison group tutoring experiences, in contrast, served to introduce freshmen to one dimension of teaching. The project freshmen were more likely than the comparison group to report learning from observing pupil/teacher interactions and reported a better understanding of the urban setting. The quantitative results suggest the project experience had a positive effect on the freshmen's flexibility in instruction, flexibility with people, and sense of personal efficacy; these effects will lay helpful foundations for developing confidence and abilities in future situations. The comparison group freshmen, however, were more likely to report an interest in teaching, a sense of having accomplished some teaching, and an interest in helping students learn. This difference is probably attributable to the fact that the comparison group students were tutors, and teaching individual students formed the bulk of their experience.

There is an interesting contrast between sense of personal efficacy ("I can make a difference"), which was higher for the project group, and sense of accomplishment ("I did make a difference"), which was reported more often in the comparison group tutors' logs than in the project group's logs. Why was the broad exposure of the project experience more related to differences in the efficacy scores than the feelings of actually having accomplished something reported by the tutors? One possible explanation is that project objectives specified a broad range of exposure and immersion in the urban middle school classrooms. Teachers reported in their interviews that some students were overwhelmed at first. But the broader exposure may have given project students the perception of being introduced to the big picture and some sense of life and work in the urban classroom. In contrast, the smaller scope of the comparison group's tutoring experiences may have left these students with a sense of having helped one or two pupils but without a coherent vision of the enterprise of urban education.

The benefits reported for this project are those one might hear from teachers and teacher educators in most settings: developing positive relationships with students; learning about the practical, daily matters involved in teaching; and respecting individuals. The difference lies in the diversity of students with whom one must form relationships. The instructional methods the teachers had the freshmen use to accomplish the objectives included observation with written reflection, observation with verbal feedback, interactions with one or a few students, and interactions with a group of students. The teachers saw opportunity to reflect, especially in writing, as important to development for the freshmen. These methods are also ones many teacher educators would use.

The difference between introducing freshmen to education in general and to urban education, in this project, was a difference in context. Diversity of pupil backgrounds made interactions with students, presentation of lesson content, class organization, grading, and classroom management more multidimensional activities than they would be if the pupil population were more homogeneous. This pilot field experience illustrated one way to structure an introduction to this

multidimensionality. The freshmen teacher candidates did learn and grow from their experiences.

An important limitation of these results is that the project school was a middle school, and most of the comparison group freshmen tutored in the fourth or fifth grades at elementary schools. Replication of the study with both project and comparison groups at the middle school level would be helpful. A further suggestion for refining the introduction to urban education at the middle school project would be to increase the amount of time allotted, although this poses the practical problem of removing something else from the already crowded teacher preparation curriculum. An interested future research question is which effects are more beneficial for developing and sustaining teacher interest and abilities in urban teaching: the feelings of accomplishment associated with a tutoring experience or the feelings of broad exposure to and beginning understanding of complex, multicultural classrooms associated with the project objectives and activities.

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Elementary Teachers' Pedagogical Content Knowledge of Mathematics

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Abstract

The purpose of this study was to characterize and compare novice and experienced elementary teachers' pedagogical knowledge and pedagogical content knowledge of three major topics in mathematics: whole number operations, fractions, and geometry. Twenty-six preservice elementary teachers and 28 experienced kindergarten through sixth grade teachers participated in this study. Data were collected via the Survey on Teaching Mathematics (Rich, Lubinski & Otto, 1994), a researcher-designed instrument that assists in describing pedagogical content knowledge. The results indicate that experienced teachers possess a greater conceptual understanding of whole number operations than do novice teachers, but that both novice and experienced teachers possess primarily a procedural knowledge of fractions. In addition, the results indicate that both novice and experienced teachers think that a good teacher is one who shows and tells students how to do the work.

When it was in its infancy, teacher education primarily focused on a teacher's knowledge of subject matter content (Shulman, 1986). However, for the past decade or more, teacher education research has emphasized the effectiveness of general pedagogical methods independent of subject matter content, such as how teachers manage their classrooms, organize activities, allocate time and turns, structure assignments, ascribe praise and blame, formulate the levels of their questions, plan lessons, and assess student understanding (Ball & McDiarmid, 1990; Onslow, Beynon, & Geddis, 1992; Shulman, 1986, 1987, 1988). In addition to teachers' subject matter (content) knowledge and their knowledge of general instructional methods (pedagogical knowledge), Shulman (1986, 1987, 1988) has suggested that teaching expertise should be described and evaluated in terms of pedagogical content knowledge. According to Shulman (1986), pedagogical content knowledge

> include[s] . . . the most useful forms of representation of . . . ideas, the most powerful analogies, illustrations, examples, explanations, and demonstrations - in a word, the ways of representing and formulating the subject that make it comprehensible to others . . . [It] also includes an understanding of what makes the learning of specific concepts easy or difficult: the conceptions and preconceptions that students of different ages and backgrounds bring with them to the learning (p. 9).

Pedagogical content knowledge is the synthesis or integration of teachers' subject matter knowledge and their pedagogical knowledge into an understanding of how particular topics, problems, or issues are organized, represented, and adapted to the diverse interests and abilities of learners, and presented for instruction (Gudmundsdottir, 1987; Shulman, 1986, 1987, 1988). It is that form of knowledge that makes teachers rather than subject area experts, for teachers differ from biologists, historians, writers, or mathematicians, not necessarily in the quality or quantity of their subject matter knowledge, but in how that knowledge is organized and used. The teaching process requires teachers to "transform" their subject matter knowledge for the purpose of teaching (Gudmundsdottir, 1987; Shulman, 1986, 1987). This transformation occurs as the teacher engages in the act of "pedagogical reasoning", i.e. examines and critically interprets instructional materials in terms of the teacher's own understanding of the subject matter; thinks through the key ideas and identifies alternative ways of representing them to students as analogies, metaphors, examples, demonstrations, simulations, etc.; adapts the material to students' characteristics such as ability, gender, language, culture, prior knowledge, conceptions, misconceptions, expectations, difficulties, strategies, etc.; and finally tailors the material to the specific students in a classroom (Shulman, 1987).

Studies indicate that novice teachers have major concerns about pedagogical content knowledge and that they struggle with how to transform and represent concepts and ideas in ways that make sense to the specific students they are teaching (Ball & Wilson, 1990; Borko et al., 1992; Onslow, Beynon, & Geddis, 1992). Onslow, Beynon, and Geddis (1992) described the developing pedagogical content knowledge of two student teachers enrolled in a one-year elementary teacher education program. They focused on a dilemma faced by the student teachers as they attempted to transform their understanding of a topic in mathematics into a form that could be understood by their students.

At this point in their career, student teachers' understanding of pedagogy is gradually being molded to fit a style of teaching with which they feel comfortable. Often the style of teaching advocated by university faculty is in conflict with the style of teaching remembered by student teachers during their own

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schooling (Onslow, Beynon, & Geddis, 1992). Many student teachers remember mathematics classrooms in which the teacher tells and the students remember. Taking on the role of facilitator to help learners to construct conceptual knowledge emerges as an exciting and rewarding alternative. This style of teaching, however, involves the transformation of subject matter knowledge, and so requires a firm grasp of various components of pedagogical content knowledge.

Herein lies the student teachers' dilemma. When novice teachers become frustrated with the difficulties inherent in teaching mathematics meaningfully, the time constraints involved in covering the content of the curriculum, and the need to cope with individual differences, they often resort to teaching the way they were taught despite their desire to do otherwise. One student teacher wrote:

> I found that it was difficult to compromise my new views about presenting mathematical concepts with my old memories about how I learned the same material. Perhaps I was surprised and even a little annoyed at how much my own education may influence how I now educate (or attempt to educate!) others. I intended to let or allow students to discover or develop the concept . . . on their own as much as possible. What interfered with this intent were time constraints and the relative difficulty of this approach as opposed to simply presenting the "rules" for students to follow and apply (Onslow, Beynon, & Geddis, 1992, p. 308).

Similar results were found by Borko et al. (1992), who focused on a single episode in one student teacher's experiences. When confronted with a student's question that required a conceptual explanation, the student teacher attempted to provide a concrete example. However, she made an error and ultimately decided to abandon the attempt, though she believed that good mathematics teaching primarily involved making mathematics relevant and meaningful for students. She then focused on computational procedures by demonstrating the use of the algorithm and providing guided and independent practice.

This concern about pedagogical content knowledge is present even in new teachers who possess substantial subject matter knowledge. Ball and Wilson (1990) focused on the underlying assumptions of "alternate route" teacher certification programs. First, it is assumed that college graduates who majored in liberal arts have, in general, more subject matter knowledge than do their teacher education counterparts since they have received an education "uncluttered" with professional course work. Second, it is assumed that subject matter knowledge is the only professional knowledge one needs to acquire in formal university or college settings. Other types of knowledge necessary to teaching, e.g., pedagogical knowledge or pedagogical content knowledge, can and should be acquired through practical experience as a full-fledged teacher.

In order to examine these assumptions, Ball and Wilson (1990) collected data on two groups of novice secondary mathematics teachers. The first group consisted of 22 undergraduate students preparing to teach and majoring in mathematics at one selective private college, one mid-sized university, and one research institution. The second group consisted of 21 postbaccalaureate mathematics majors entering teaching through an urban school district's alternate certification program. Little difference was found in the mathematical understandings between novices in the alternate route program and teacher education candidates, either when they entered their program or when they finished. These results not only revealed that both groups possessed minimal knowledge of elementary topics, but also that the novice teachers were often aware that all they had learned were rules and procedures, which they had memorized and learned to use in algorithmic ways. No one had helped them develop meaningful understandings of the rules and procedures. One of the teacher education mathematics majors remarked:

> . . . here I am supposedly this math wizard and I've got a lot of knowledge and I've probably made more connections than a lot of people, but there are a lot of connections that I haven't made. I haven't seen these things before and I don't know where I was supposed to learn them — in high school? Or middle school? (p. 11)

To analyze the validity of the second assumption, two aspects of the novice teachers' developing ideas about teaching were examined: their notions about the teacher's role in helping students learn about mathematics, and their pedagogical perspective on the content. With respect to role, Ball and Wilson (1990) saw little difference in the teachers' views as a group. When the teachers entered their programs, both groups thought that a teacher who shows and tells students exactly how to do the work is most likely to help students learn mathematics. By the end of the program, more novices in both groups had shifted to describing good teaching in terms of "leading" and "guiding" students rather than telling. But in neither group did more than one or two people favor a more facilitative, constructivist-oriented style.

Ball and Wilson (1990) saw similar trends in responses to interview questions which posed pedagogical problems (e.g., a student suggests a nonstandard algorithm, asks a question, presents an error on a paper) and asked respondents how they would deal with the situation. In every case, teacher candidates and teacher trainees alike said they would respond directly to the student, telling the student if the idea was correct, showing him or her what to do, answering questions directly. And there was virtually no change in this over the course of their programs. Ball and Wilson (1990) claim that teachers who themselves are tied to a procedural knowledge of mathematics are not equipped to represent mathematical ideas to students in ways that will connect their prior and current knowledge and the mathematics they are to learn, a critical dimension of pedagogical content knowledge.

While this literature indicates that novice teachers have major concerns about pedagogical content knowledge and that

they struggle with how to transform and represent concepts and ideas in ways that make sense to the specific students they are teaching (Ball & Wilson, 1990; Borko et al., 1992; Onslow, Beynon, & Geddis, 1992), the assumption that pedagogical knowledge or pedagogical content knowledge can be acquired through practical experience warrants further investigation.

The purpose of this study was to characterize and compare novice and experienced elementary teachers' pedagogical knowledge and pedagogical content knowledge of three major topics in mathematics: whole number operations, fractions, and geometry.

Method

Participants

Twenty-six preservice elementary teachers and 28 experienced kindergarten through sixth grade teachers participated in this study. The preservice teachers were elementary education majors at a mid-sized midwestern university. The experienced teachers are employed in eight schools located in or near one midwestern city. The schools include one parochial school and seven public schools.

All teachers in the sample, preservice and inservice, self-selected to participate in a five-year research project[1] that provided information about mathematics, mathematics learning, and mathematics teaching. Extending pedagogical content knowledge was a major focus of the project. The goal of the project was to establish learning environments with experienced teachers that reflect current research findings on how children learn mathematics and to create within these learning environments a cooperative teaching team of an experienced teacher and an inexperienced teacher, in order to produce a better novice teacher. In the Spring of 1993, interested experienced teachers from four school were asked to submit a statement reflecting their reasons for wanting to participate in such a project. Selection was based on recommendations from the on-site advisory board. The intent of the selection process was to provide a group of experienced teachers that was representative of the population in relation to teaching experience, background in mathematics, gender, and ethnicity. In the Spring of 1994, the same procedure was used to select a group of inexperienced teachers from a pool of students who volunteered to participate during their senior year in the university's elementary education program. Again, the intent of the selection process was to obtain a representative group of inexperienced teachers.

Data Collection

Baseline data regarding pedagogical content knowledge were collected in the Spring of 1993 for the inservice teachers and in the Spring of 1994 for the preservice teachers. Data for each teacher were gathered using the Survey on Teaching Mathematics (Rich, Lubinski, & Otto, 1994), a researcher-designed instrument that assists in describing pedagogical content knowledge. The survey consists of 12 questions primarily involving whole number operations, fractions, geometry, number sense, and mathematical reasoning. The open-ended questions, which focus on the instructional decisions a teacher would make in regard to specific classroom situations involving mathematics, are intended to extract information regarding the participants' own knowledge and beliefs about mathematics. This data provided the data set for the study. In order to simplify data analysis, one survey question was selected from each of the following topics: whole number operations, fractions, and geometry. The three questions were chosen based on the type of information elicited. That is, each of the selected questions presented a classroom situation in which the students had made a "common" error and the teacher was asked how he or she would respond and why. These questions seemed particularly appropriate for examining the teachers' knowledge of instructional methods (pedagogical knowledge) in addition to their pedagogical content knowledge.

Data Analysis

The data were analyzed using qualitative research methods. The teachers' pedagogical content knowledge was analyzed using Shulman's (1987) description of "pedagogical reasoning." According to Shulman (1987), the process of pedagogical reasoning involves comprehension and transformation. Teachers much first comprehend the content of instruction and then transform the comprehended ideas in some way for the purpose of teaching. Consequently, the teachers' interpretations, representations, and adaptations of the content were examined. It appears that teachers who possess only a procedural knowledge of mathematics are unable to transform and represent mathematical concepts and ideas in ways that make sense to their students (Ball & Wilson, 1990; Borko et al., 1992; Onslow, Beynon, & Geddis, 1992). Therefore, the participants' interpretations, representations, and adaptations of the content were and the responses coded in order to determine the degree to which their knowledge was procedural. Four main categories were used to classify responses: procedural only, both procedural and conceptual, conceptual only, or neither procedural nor conceptual.

The teachers' pedagogical knowledge was analyzed in terms of their approach to teaching mathematics as identified by Kuhs and Ball (1986). Thus, within each main category, responses were further classified using the following three categories. In the learner-focused approach to teaching mathematics, the teacher's role is to stimulate student learning by posing problems, designing experiences, and asking questions and to facilitate student learning by listening, probing, accepting, restating, and encouraging. The learner actively participates in the exploration of ideas, i.e. the learner is a creator of mathematics. In the content-focused with emphasis on understanding approach to teaching mathematics, the teacher's role is both to organize the content and to guide student learning. The learner is considered to be a discoverer of the mathematics presented by the teacher via the problems posed for investigation. In the content-focused with emphasis on performance approach to teaching mathematics, the teacher's role is to present material

in an expository style, explaining concepts and demonstrating skills. The learner listens, responds to teacher questions, and does exercises using procedures that have been modeled by the teacher, i.e. the learner's role is to imitate the teacher.

Results

Given below are the results of one survey question from each of the following topics: whole number operations, fractions, and geometry.

Whole Number Operations

> *One day your students finish working on addition and subtraction with regrouping. On a written test, many of them "forget" to regroup when they need to in subtraction. Instead they do this:*
>
> $$\begin{array}{r} 60 \\ -28 \\ \hline 48 \end{array}$$
>
> *a) What would you do and why?*
> *b) Why is this an appropriate thing to do?*
>
> *(NCTM, 1991)*

The results for the question involving whole number operations are summarized in Table 1. Fifteen of the preservice teachers and four of the experienced teachers focused exclusively on the procedure. A common response for this group of teachers was to "review how to subtract from back to front with a 0. Tell them to make the zero into a ten, turn the 6 into a 5, and then subtract." These teachers' approaches to teaching mathematics seem to fit with the content-focused with emphasis on performance approach described by Kuhs and Ball (1986), since most responded that they would tell or show the students what to do. Nearly all of the teachers in the study interpreted this as a "straightforward" regrouping problem. Only two of them, both preservice teachers in this group, responded directly regarding their interpretation of the content. One teacher claimed that "we . . . show that the zero in 60 is a 10 and 8 have to be taken away from it." The other responded that "I'll illustrate how to make the zero a 10 and the 6 a 5. I'll explain to them how the 10 is borrowed from the 6." The teachers in this group tended to rely primarily on the symbolic or algorithmic representation of the content. However, one experienced teacher did indicate that he or she would also "have them tell me if the answer is reasonable."

Five of the preservice teachers and 13 of the experienced teachers provided both procedural and conceptual responses to this question. It is interesting to note that all of the experienced teachers in this group except two said that they would "go back to manipulatives" first and "then bring [the students] back to pencil and paper," whereas only one of the preservice teachers expressed this idea and, in fact, three of them said that they would "review the process" and then "try hands-on methods" if necessary. One preservice teacher claimed that using base ten blocks "gives the child a physical explanation of why you cancel the six and make the zero a ten." While all of the teachers in this group mentioned the use of manipulatives as a way to represent the content in addition to the algorithm, four of the preservice teachers and ten of the experienced teachers responded that they "would [use the manipulatives to] model the procedure." One experienced teachers also mentioned the use of a problem solving context. Nevertheless, this approach to teaching mathematics also seems to fit with the content-focused with emphasis on performance approach (Kuhs & Ball, 1986), since the teacher is the one who is actually doing the manipulating. Just one preservice teacher and three experienced teachers in this group mentioned having the students use the manipulatives, either to do more problems involving regrouping or to check the problem above, "because it allows the student to discover his/her own error." Therefore, these teachers' approaches to teaching mathematics therefore seem to fit with the content-focused with emphasis on understanding approach described by Kuhs and Ball (1986), though only the preservice teacher mentioned the use of cooperative learning groups.

Six of the preservice teachers and eight of the experienced teachers gave only conceptual responses to this question. Like the previous group, almost all of the teachers in this group mentioned the use of manipulatives as a way to represent the content. Three of the preservice teachers and two of the experienced teachers said something like, "I would get out the [manipulatives] and demonstrate over how to do this problem and more like it. Evidently my first demonstration was too abstract. It needs to be more visual." Again, this approach to teaching mathematics seems to fit with the content-focused with emphasis on performance approach (Kuhs & Ball, 1986), since the teacher is the one using the manipulatives and the students are only observers. Two preservice teachers and five experienced teachers in this group mentioned having the students use the manipulatives instead, because "they would understand why they need to regroup." Of these, one preservice teacher and one experienced teacher mentioned the use of cooperative learning groups and one experienced teacher mentioned the use of a problem solving context. Rather than using manipulatives, one experienced teacher's conceptual explanation involved the use of estimation in a problem solving context. These teachers' approaches to teaching mathematics seem to fit with the content-focused with emphasis on understanding approach described by Kuhs and Ball (1986). Just one participant in the entire study, a preservice teacher in this group, mentioned having the "students . . . explain their thinking to better understand where and why they were making this mistake." Thus this teacher's approach to teaching mathematics seems to be the only one to fit with the learner-focused approach described by Kuhs and Ball (1986).

Finally, three of the experienced teachers' responses could not be categorized as either procedural or conceptual. One teacher simply stated that he or she would "go back and reteach with different strategies." Another teacher in this group said that, "I may go on to another unit and come back to it (subtraction) later as the students are obviously not ready for subtraction with regrouping." The third teacher discussed how he or she would assign grades for this test.

Table 1
Results for Question Involving Whole Number Operations

Response Categories	Procedural Only	Procedural and Conceptual	Conceptual Only	Neither Procedural nor Conceptual
Interpretation of the Content	"Straightforward" regrouping problem	"Straightforward" regrouping problem	"Straightforward" regrouping problem	"Straightforward" regrouping problem
Common Response	"Review how to subtract from back to front with a 0. Tell them to make the zero into a ten, turn the 6 into a 5, and then subtract."	Preservice Teachers: "Review the process" and then "try hands-on methods" if necessary. Inservice Teachers: "Go back to manipulatives" first and "then bring [the students] back to pencil and paper."	"I would get out the [manipulatives] and demonstrate over how to do this problem and more like it. Evidently my first demonstration was too abstract. It needs to be more visual."	"Go back and reteach with different strategies." "Go on to another unit and come back to it (subtraction) later as the students are obviously not ready for subtraction with regrouping."
Number of Preservice Teachers	15	5	6	0
Number of Inservice Teachers	4	13	8	3
Approaches to Teaching Mathematics	Content-focused with emphasis on performance (most responded that they would tell or show the students what to do)	Content-focused with emphasis on performance (4 preservice and 10 inservice teachers responded that **they** "would [use manipulatives to] model the procedure") Content- focused with emphasis on understanding (1 preservice and 3 inservice teachers)	Content-focused with emphasis on understanding (2 preservice and 6 inservice teachers mentioned having **students** use manipulatives) Content- focused with emphasis on performance (3 preservice and 2 inservice teachers)	

Fractions

> *Suppose you are working with a group of students on addition and subtraction of fractions. Several of them are solving problems as shown below:*
>
> *1/2 + 1/3 = 2/5*
>
> *When asked about their solution they respond, "Jane made one out of two free throws in the first half and one out of three in the second. So, she made two out of five in the game."*
>
> *a) What do you respond?*
> *b) Why do you respond this way?*

Table 2 summarizes the results for this fractions question. Thirteen of the preservice teachers and 11 of the experienced teachers focused solely on the procedure by relying primarily on the algorithmic representation of the problem, again taking an approach to teaching mathematics that seems to fit with the content-focused with emphasis on performance approach described by Kuhs and Ball (1986). This group provided four different interpretations of this problem. Ten preservice teachers and six experienced teachers gave responses involving or related to the idea that "when adding and subtracting fractions, you must find a common denominator." Two preservice teachers equated this with "shooting" the same "number of shots in each half." One preservice teacher stated that "the denominator must be the same because you are adding two parts of a whole and not two separate parts of two separate wholes." Similarly, one experienced teacher wrote "we need to look at the total number of shots as our denominator so that one out of five and another one out of five gives us a total of two out of five." One preservice teacher and two experienced teachers commented that they "would explain the difference between ratios and fractions." One preservice teacher responded that "1/2 could also be used to represent three out of six or five out of ten [which] would not [give] the same answer." And finally, one experienced teacher gave the following explanation: "Jane made 1/2 of her free throws in the first half and 1/3 of her free throws in the second half. What fraction of her free throws did she make during the game? Did she make more than 1/2 of them or less than 1/2 of them." One preservice teacher and two experienced teachers in this group avoided interpreting the problem by offering comments like "I would have to agree that their logic makes sense, but I would suggest we take another look at the process of adding fractions and the steps we needed to take."

Four of the preservice teachers and four of the experienced teachers provided both procedural and conceptual responses to this question. In addition to using the algorithm, three of the preservice teachers and two of the experienced teachers in this group said that they would draw pictures or use manipulatives

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to represent the problem, taking an approach to teaching mathematics that also seems to fit with the content-focused with emphasis on performance approach (Kuhs & Ball, 1986). The other three teachers in this group stated that they would have the students draw a picture or try using manipulatives in order to "lead them to discover you have to have a common whole," thereby taking an approach to teaching mathematics that seems to fit more with the content-focused with emphasis on understanding approach (Kuhs & Ball, 1986). This group also provided four different interpretations of the problem. Three preservice teachers and two experienced teachers claimed "that in order to add fractions, the denominators must be the same." One preservice teacher mentioned that "[fractions are] parts of a whole . . . they need to learn the difference between ratio and . . . fraction." One experienced teacher claimed "that this answer would show percentage rather than the solution to the fraction problem." Another experienced teacher said that he or she "would . . . show the student that . . . ½ is not necessarily one out of two but may be two out of four."

Four of the preservice teachers and eleven of the experienced teachers gave only conceptual responses to this question. This time three preservice teachers and six experienced teachers in this group mentioned drawing pictures or showing with manipulatives, an approach to teaching mathematics that seems to fit with the content-focused with emphasis on performance approach (Kuhs & Ball, 1986). The remaining six teachers in this group suggested having the students draw pictures or use manipulatives in order to "find their mistakes," an approach to teaching mathematics that, as previously stated, seems to fit with the content-focused with emphasis on understanding approach (Kuhs & Ball, 1986). This group provided three different interpretations of this problem. One preservice teacher and four experienced teachers gave responses like "ratios work differently than fractions [which are] parts of a whole." One preservice teacher and one experienced teacher claimed that "we must combine like things." Two preservice teachers and five experienced teachers offered responses related to the idea of using the same whole. One experienced teacher in this group avoided interpreting the problem.

Five of the preservice and two of the experienced teachers' responses could not be categorized as either conceptual or procedural. Four preservice teachers and one experienced teacher believed that the student's solution was correct. In fact, one preservice teacher commented, "If this is an easy way for students to remember how to add fractions, then I would use "fun" examples like this when I explain the addition of fractions." One preservice teacher admitted that he or she did not know how to respond, since "the logic is rational" but the answer is wrong. One experienced teacher responded mysteriously, "I wonder what Jane would say about you saying that she made only two out of five shots? I think she might be a bit upset. See if you can figure out why I am saying this."

Table 2
Results for Question Involving Fractions

Response Categories	Procedural Only	Procedural and Conceptual	Conceptual Only	Neither Procedural nor Conceptual
Interpretation of the Content	10 Preservice and 6 Inservice Teachers: "When adding and subtracting fractions, you must find a common denominator." 1 Preservice and 2 Inservice Teachers: Ratios and fractions are different.	3 Preservice and 2 Inservice Teachers: "In order to add fractions, the denominators must be the same." 1 Preservice Teacher: "[Fractions are] parts of a whole . . . ratio[s] and fraction[s]" are different.	2 Preservice and 5 Inservice Teachers: Offered responses related to the idea of using the same whole. 1 Preservice and 4 Inservice Teachers: "Ratios work differently than fractions [which are] parts of a whole."	4 Preservice and 1 Inservice Teacher: Believed that the student's solution was correct. 1 Preservice Teacher: "The logic is rational" but the answer is wrong.
Number of Preservice Teachers	13	4	4	5
Number of Inservice Teachers	11	4	11	2
Approaches to Teaching Mathematics	Content-focused with emphasis on performance (relied primarily on the algorithmic representation of the problem)	Content-focused with emphasis on performance (3 preservice and 2 inservice teachers responded that they would draw pictures or use manipulatives to represent the problem, in addition to using the algorithm) Content-focused with emphasis on understanding (1 preservice and 2 inservice teachers)	Content-focused with emphasis on performance (3 preservice and 6 inservice teachers) Content-focused with emphasis on understanding (1 preservice and 5 inservice teachers mentioned having students draw pictures or use manipulatives)	

1056

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Geometry

> *The following problem is posed to a group of students. "Suppose you had 64 meters of fence with which you were going to build a pen for your large dog, Bones. What are some different pens you could make if you use all the fencing? What is the pen with the least play space? What is the biggest pen you can make - the one that allows Bones the most play space? Which would be the best for running?" After considering the problems, the students explain that it doesn't matter since all the pens will have the same perimeter - 64 meters.*
>
> *a) Explain why they gave this response.*
>
> *b) How would you respond to their solution?*
>
> *c) Explain.*
>
> *(NCTM, 1991)*

Table 3 shows the results of this geometry question. Just one experienced teacher provided a response to this question that was both procedural and conceptual, since he or she was the only one that specifically mentioned an area formula. "I would first of all draw a picture showing the different areas that have a perimeter of 64 meters. I would point out how to find area — length x width." This teacher's approach to teaching mathematics seems to fit with the content- focused with emphasis on performance approach (Kuhs & Ball, 1986). Though all of the other teachers attempted only conceptual responses, 18 of the preservice teachers and seven of the experienced teachers mentioned that they themselves would draw pictures or use manipulatives to demonstrate, an approach to teaching mathematics which also seems to fit with the content-focused with emphasis on performance approach (Kuhs & Ball, 1986). One preservice teacher claimed that "an example from the teacher . . . lights up the bulb! Then the students are off and running." Eight of the preservice teachers and 18 of the experienced teachers instead suggested having the students engage in these sorts of activities, thereby taking an approach to teaching mathematics that seems to fit with the content-focused with emphasis on understanding approach (Kuhs & Ball, 1986). One experienced teacher did not respond to this question at all and one experienced teacher's response could not be categorized. He or she stated that "the students didn't want to go to the work of figuring this problem."

There were three different interpretations given. Though 19 preservice teachers and 12 experienced teachers specifically mentioned something to the effect that "[the students] were confusing perimeter with area," 13 preservice teachers' and 15 experienced teachers' responses were limited to the consideration of rectangular pens only. One preservice teacher claimed that of these, the "square produces [the] most area." Five preservice teachers and one experienced teacher at least included the possibility of a circular pen and three preservice teachers and one experienced teacher also mentioned the use of other polygonal figures. One experienced teacher focused in part on definitions of perimeter and area, by "explain[ing] to them that area is the amount of space an object covers and the perimeter is the length and width of an object." Finally, two experienced teachers claimed that the solution was correct. For example, "While they are correct I would encourage them to look at . . . what would be an interesting and creative way to use an area." Only four teachers mentioned using cooperative learning groups.

Table 3

Results for Question Involving Geometry

Response Categories	Procedural Only	Procedural and Conceptual	Conceptual Only	Neither Procedural nor Conceptual
Interpretation of the Content		1 Inservice Teacher: Offered response limited to the consideration of rectangular pens only.	13 Preservice and 15 Inservice Teachers: Offered responses limited to the consideration of rectangular pens only. 5 Preservice and 1 Inservice Teacher: Included the possibility of a circular pen. 2 Inservice Teachers: Believed that the student's solution was correct.	1 Inservice Teacher: Did not respond to this question at all. 1 Inservice Teacher: "The students didn't want to go to the work of figuring this problem."
Number of Preservice Teachers	0	0	26	0
Number of Inservice Teachers	0	1	25	2
Approaches to Teaching Mathematics		Content-focused with emphasis on performance (1 inservice teacher responded that "I would ... draw a picture showing the different areas that have a perimeter of 64 meters. I would point out how to find area -- length x width.")	Content-focused with emphasis on performance (18 preservice and 7 inservice teachers responded that theywould draw pictures or use manipulatives to demonstrate) Content- focused with emphasis on understanding (8 preservice and 18 inservice teachers suggested heaving students demonstrate)	

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Discussion

Approximately one-half of the preservice teachers' responses to the questions involving whole number operations and fractions (57.7% and 50% respectively) were procedural only, somewhat supporting the findings which seem to indicate that novice teachers possess primarily a procedural knowledge of mathematics (Ball & Wilson, 1990; Borko et al., 1992). The research results suggesting that novice teachers think that a good teacher is one who shows and tells students how to do the work (Ball & Wilson, 1990; Borko et al., 1992; Onslow, Beynon, & Geddis, 1992) were also supported, since more than two-thirds of the preservice teachers' responses to all of the questions (84.6% for whole number operations, 73.1% for fractions, and 69.2% for geometry) fit with the approach to teaching mathematics that emphasizes performance (Kuhs & Ball, 1986).

Unlike the preservice teachers, very few of the experienced teachers (14.3%) gave strictly procedural responses to the question involving whole number operations. The fact that 75% of them as opposed to only 42.3% of the preservice teachers suggested the use of manipulatives seems to indicate that experienced teachers possess a greater conceptual understanding of whole number operations than do novice teachers. However, many more experienced teachers (about the same number as preservice teachers -- 39.3%) gave strictly procedural responses to the question involving fractions. This seems to suggest that experienced teachers have a greater conceptual understanding of whole number operations than they do of fractions. In addition, more than one-half of the experienced teachers' responses for the questions involving whole number operations and fractions (57.1% and 67.9% respectively) fit with the approach to teaching mathematics that emphasizes performance (Kuhs & Ball, 1986). Together these results seem to indicate that neither pedagogical knowledge nor pedagogical content knowledge is necessarily acquired through practical experience.

Though nearly all of the teachers provided conceptual responses to the question involving geometry, the fact that a great many of their interpretations were limited to the consideration of rectangular pens only seems to suggest that their understanding of this topic is severely restricted. One wonders whether more procedural responses would have been given if the teachers had thought of other possibilities. One also wonders what effect this limited interpretation has on the teacher's approach to teaching mathematics, since more experienced teachers gave responses to this question that fit with the approach which emphasizes understanding than with the approach which emphasizes performance (Kuhs & Ball, 1986).

To become a good mathematics teacher requires thoughtful reflection. Both novice and experienced teachers, themselves the products of traditional mathematics classrooms, need to revisit and extend their own mathematical understandings. They need opportunities to explore, identify, and challenge their assumptions about the teacher's role, as well as to develop pedagogical content knowledge.

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1058

Book Review

Dismantling Desegregation

Joseph Watras
University of Dayton

Readers are asked to review recently published or classic books in education and research. In his review of Dismantling Desegregation, *Watras acknowledges the authors' contribution to the discussion of urban education but challenges their indirect approach to addressing abstract considerations underlying the complex issue of racial integration in schools and communities.*

Orfield, G. & Eaton, S. E. (1996). *Dismantling desegregation: The quiet reversal of Brown v. Board of Education*. New York: New Press. Pp. 424.

In 1993, the National School Boards Association issued a report from the Harvard Project on School Desegregation citing an increase in racial segregation. For example, from 1986 to 1991, the proportion of Black students attending schools with more than half minority students rose to the level that had existed before the U.S. Supreme Court's first busing decision in 1971. During the same period, the share of Black students in schools with 90-100 percent minority students rose.

Calling the trend the "quiet reversal" of *Brown v. Board of Education*, Gary Orfield, Susan E. Eaton, and the Harvard Project on School Desegregation build on the data they presented in 1992. Their new book, *Dismantling Desegregation*, is a series of eleven essays written by eight people. Orfield and Eaton wrote six of the chapters, and they revised the others to harmonize their structure, analysis, and conclusions. Some chapters are better written than others. Often, the same information appears in several places, and the book suffers from such editing problems as different dates cited for the same U.S. Supreme Court decision and misspelled words. Nonetheless, the arguments proceed logically.

Orfield begins with a description of the cases on which the U.S. Supreme Court built federal desegregation law. He claims the Detroit case, *Milliken v. Bradley*, was the first major blow against school desegregation. He contends that in *Milliken*, the Supreme Court restricted desegregation in the North by making it more difficult for a court to join suburban and urban districts. However, Orfield believes that the Supreme Court used three decisions to allow even Southern states to return to such segregative practices as neighborhood schools. The cases were: *Board of Education of Oklahoma City v. Dowell* in 1991, *Freeman v. Pitts* in 1992, and finally *Missouri v. Jenkins*. Orfield says that these decisions require only that school officials claim that their policies will improve education.

In the next chapter, Orfield argues that efforts such as compensatory education to improve segregated schools recall *Plessy v. Ferguson's* inadequate standard of separate but equal. This occurs because courts have held that private decision making and economics may cause racial segregation. In such cases, segregation appears to be a normal state of affairs. The unfortunate result is that blame for the failure of minority children in segregated schools falls on the children, their families, or the school teachers. But the teachers of segregated classes cannot easily create a curriculum that compensates for the students' deficiencies. More frequently, the teachers feel they must "water down" the curriculum. Citizens may blame urban school administrators, who are usually Black, for the low test scores of their students. As a result of public pressure, urban administrators lose their positions after an average of three years and rarely have time to carry out any reasonable reforms.

According to Orfield and Eaton, segregation is dangerous because racially integrated schools have better resources than segregated facilities. Further, students in racially integrated schools bring fewer problems to the buildings than do the students in segregated settings. As a result, despite efforts to make segregated schools effective, African American or Latino students who attend racially integrated schools have a better chance of finishing college than the same type of students with similar test scores from segregated high schools.

Some sociologists blame federal desegregation efforts for the rising tide of racial isolation. From 1972 to 1992, the enrollment of White students in public schools fell 14 percent while the number of Black students rose 3 percent and Latino enrollments soared 89 percent. Citing this trend, some sociologists contend that White students fled public schools to avoid busing. Orfield and Eaton disagree, however, because White enrollments in private schools fell over the same twenty-year period. For Orfield and Eaton, the causes of increasing segregation were more basic. First, from 1968 to 1986, the total number of white students fell sharply as birth rates dropped. Second, most White students attended suburban public schools rather than urban ones. Each year from 1985 until 1990, central cities lost 1.6 to 3.0 million residents while the surrounding suburbs gained 1.9 to 3.2 million persons. Most of the expansion in suburban communities was due to increased numbers of middle class and White residents. Furthermore, contrary to popular belief, the presence or the absence of an urban school desegregation plan did not alter the migration. New York, Chicago, and Houston never had busing plans, yet the White population declined in those cities. Los Angeles had a limited busing plan for a few months. When the busing ended, White flight continued.

Despite these dismal findings, schools do not have to remain segregated. Orfield and Eaton believe that metropolitan

1059

desegregation would provide urban minority students access to suburban schools with middle class students. Further, with metropolitan plans, people from an entire area may participate in the reform of public schools.

Next, Orfield examines four misconceptions that justify lifting a desegregation order, thus allowing a return to neighborhood schools and resegregation. The first misconception is the view that segregated classrooms can be effective with the proper administrative or instructional model. Anecdotal evidence for this view derives from such highly publicized success stories as Marva Collins or Jaime Escalante. However, segregated classrooms function worse than do integrated ones. A second misconception is that Whites will remain in a city or return to it if the courts lift a desegregation order. According to Orfield, this simply does not happen. A third misconception arises when school districts present themselves as free from discrimination. The increase in the number of Black administrators seemed to bolster this view. However, Black administrators cannot solve the systemic problems of city schools. Finally, officials often present a claim that costs will go down when desegregation mandates end. However, if popular innovations such as magnet schools persist, costs may actually increase.

Chapters five through ten present case studies of such cities as Norfolk, Virginia; Detroit, Michigan; Little Rock, Arkansas; Charlotte, North Carolina; Kansas City, Missouri; and Prince George's County, Maryland. These show the problems associated with monetary compensation for disadvantaged schools, with local control of schooling, and with magnet schools.

In the last substantive chapter, Orfield returns to discuss housing segregation. Although the Nixon and the Carter administrations considered some housing dispersal programs, Orfield contends that these programs ended before they could prove their utility. The Clinton administration has been unable to overcome congressional resistance to such intrusions in local affairs.

In his conclusion, Orfield offers several policy suggestions to make desegregation a step in the transformation of segregated institutions into integrated communities. These include asking lawyers and citizens' groups to represent the rights of minority children in courts. He calls for the careful monitoring, evaluation, and improvement of desegregation plans. Orfield asks the media to engage in careful analysis rather than to accept official statements uncontested. However, he acknowledges that accurate information is not readily available in part because neither the federal government nor private foundations offer to support research about racial desegregation. Finally, Orfield suggests that school officials and housing agencies work together to foster integration. One example of the way this could happen is to build neighborhood schools only in integrated neighborhoods.

In all, Orfield and Eaton seem to believe that good social science can help people reform society. As a result, they make a moral plea for desegregation without delving into abstract considerations. Unfortunately, I do not share their faith. I think the moral or religious considerations of racial integration deserve much more direct attention. In general, from 1954 until 1963 the battle to racially integrate schools and society followed a legal route. For example, in Little Rock, Arkansas, the desegregation of Central High School was termed a question of state's rights. When Martin Luther King, Jr. expressed his disappointment with legal solutions, he encouraged people to resist evil without violence. However, this aim did not offer clear direction. People engaged in nonviolent marches to advance segregationist policies saying they wished to fight the evil they saw in court ordered racial integration.

Orfield and Eaton observe how the aims of multiculturalism and meritocracy can reinforce segregation. However, simply showing that something causes segregation will not convince people that they should live in integrated settings. Nor does it help to show that minorities suffer under racial segregation. For example, from 1964 to 1974, all sides in the controversy about racial desegregation claimed to be advancing human rights. Even social scientists could not straighten out these conflicting claims. More important, the federal government reinforced each type of claim at one time or another. Liberals asserted that Black children have a right to attend racially integrated schools, and the 1964 U.S. Civil Rights Act reinforced those views. Conservatives argued that children had a right to attend a neighborhood school, and the U.S. Congress tried to block court ordered busing. Black activists said that minority parents have the right to control their children's schools, and the U.S. Department of Health, Education, and Welfare offered Model Cities grants to develop such programs. In this light, it is possible to read *Milliken* as showing that the U.S. Supreme Court did not block desegregation as Orfield believes. The decision could reflect the unwillingness of the justices to reinforce anyone's rights. Instead, the justices chose to correct only illegal acts.

My bias is that if we are to have racial integration, people must think that it benefits the society as a whole and them in particular. On the other hand, Orfield and Eaton see policies as more important than philosophy. They point to Charlotte, North Carolina, as a city that voted out the plans of a superintendent to resegregate the schools. The authors contend that the 1971 court ordered busing convinced the community that desegregation and academic achievement went together. Subsequent conservative criticisms of busing weakened this faith but never destroyed it.

From such histories, Orfield and Eaton seem to believe that good information can convince people that there are a variety of potentially successful techniques to desegregate schools or communities. I think that most people know that those methods could work. Consequently, I feel that it is most important to express clearly and completely the reason for applying these strategies. Whichever perspective you hold, Orfield and Eaton's book is an important contribution to the discussion of urban education.

1060

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For more information and/or registration materials, please contact:

Thomas S. Parish, M-WERA Program Chair
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Featured Speakers:

Dr. Robert J. Shoop
is a professor of educational law at Kansas State University. He has authored more than 100 refereed journal articles, nine books, and several monographs and book chapters that deal with various legal issues. His most recent books are: Sexual Harassment in Our Schools, How To Stop Sexual Harassment in Our Schools, and Sexual Harassment on Campus. He has also produced video programs regarding ways to eliminate sexual harassment that have won national and international awards, plus Dr. Shoop has been the recipient of various teaching excellence awards, has served as the director of the Education Law Association, and has frequently served as an expert witness in numerous sexual harassment and abuse cases.

Dr. James B. Boyer
is a professor of curriculum and American ethnic studies at Kansas State University. Since he completed his Ph.D. at the Ohio State University, he has dedicated his efforts to teaching and researching in the field of Multicultural Understandings and Issues of Diversity. His most recent book (co-authored with Prentice Baptiste) is entitled Transforming the Curriculum for Multicultural Understandings. At present, Dr. Boyer serves as President of an independent multicultural research firm, plus he continues to serve as an educational consultant for school districts, corporations, government agencies, and other organizations throughout the United States that are concerned with providing human services to all.

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1063

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1064

Explorations of Preservice Teachers' Learning Strategy Use

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Loretta Wilkinson
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Abstract

The objectives were to identify learning strategy strengths and weaknesses of preservice teachers (n = 90) in an entry level educational psychology course that incorporated strategy instruction. Strategy use was assessed at the beginning and end of the course by the Learning and Study Strategies Inventory (LASSI), a diagnostic inventory of 10 scales. A comparison of mean percentiles with LASSI norms on all scales indicated need for remediation by students. The results indicated that learning strategy scores varied according to student GPA and final course grade. Implications for preservice teachers as learners and potential teachers of strategies were discussed.

What do we know about strategy use of college students and preservice teachers? With the onset of the research on cognition, the role of the learner in acquisition of content has received increased emphasis (Weinstein & Mayer, 1986), that is, the student's activities or strategies are seen as a key component in successful learning. This in turn has led to an increased interest in learning strategy instruction (Chipman & Segal, 1985; Phye & Andre, 1986) including increased research about the strategy use of postsecondary students and programs to train strategy use at this level (McKeachie, 1987; Weinstein & Underwood, 1985).

The initial concern for the need for strategy instruction at the postsecondary level was focused primarily on the underprepared or at-risk student (McKeachie, 1987; Weinstein & Underwood, 1985). There is increasing evidence that many college students, not just those categorized as "at-risk," are in need of strategy instruction if they are to perform well. Simpson (1984) reported that college freshmen were deficient in several areas: possessed restricted range of strategies, lacked an understanding of why a strategy was important to their own learning processing, and used one strategy for most learning tasks regardless of the content area. In a study of 514 college freshmen, Hulick & Higginson (1989) found: students scored lower than the normed sample on a measure of learning strategy use, the Learning and Study Strategies Inventory (LASSI); students who used strategies had higher grades at the end of the freshman year; and students who scored lower on several subscales judged college to be more difficult. In support of the need for strategy instruction at the college level, only 24% reported they had even minimal training in the use of learning strategies prior to college.

This concern with learning strategy proficiency extended to the learning strategy use of students who are enrolled in teacher education programs in this university. From observations and informal assessment of student strategy use, it was inferred that many students had a limited repertoire of strategies. On this basis weekly "mini-lessons" in strategy use and student learning logs were included in an undergraduate educational psychology course. Descriptive data gathered through student learning logs gave a clearer picture of the preservice teachers as learners (Alderman, Klein, Seeley & Sanders, 1993). The students were categorized as successful, improving, and less successful. Students identified as successful and improving reported more use of specific as opposed to general strategies, set specific as opposed to general goals, and engaged in more self monitoring behavior. From these data, the authors concluded that there is a need to identify, through assessment, more specific strategy needs in order to provide more effective instruction.

The present approach to learning strategy assessment is a reflection of the cognitive research of recent years. Focus of cognitive research in the seventies and eighties was on remediation of learning deficits in academically underprepared students (Weinstein, 1988). This led to a need to identify a means of assessing student deficiencies in order to provide appropriate remediation.

Prior assessment approaches focused on traditional "study skill" areas such as notetaking and test taking and tended to use a "correlational design" (Svensson, 1977). Since items were created on the basis of how well they distinguished between students with high and low grade point averages, they provided little information about how students study or learn. In contrast, a "functional approach" to assessment identifies differences in how students learn, which directly affects learning and academic outcomes (Svensson, 1977).

The Learning and Study Strategies Inventory (LASSI) (Weinstein, Palmer, & Schulte, 1987) was developed as a functional approach. The LASSI consists of ten scales: attitude -- attitude and interest in college; motivation -- willingness to work hard and take responsibility for own effort; time management -- organization and scheduling of time; anxiety -- degree of worry about school and performance; concentration ability to pay close attention to academic tasks; information processing -- imaginal and verbal elaboration; selecting main idea -- ability to pick out most impor-

1065

tant ideas; study aids -- use of support techniques or materials; self-testing -- comprehension monitoring; test-taking strategies -- preparation for exams. The scoring manual provides norms for the subscales with suggestions that students above the 75th percentile do not need remediation; those between 75th and 50th percentiles should consider improving relevant strategies in order to optimize performance, while those below the 50th percentile need to improve in order to have a chance of success in school (Weinstein, 1987).

The functionality of the LASSI as a measure is supported to some degree by Hulick & Higginson (1989). It was found that low and high GPA (above and below 2.75) students differed significantly on six subscales: attitude, motivation, anxiety, concentration, information processing, and test taking skills.

Our purpose in this exploratory study was to determine the learning strategy proficiency of preservice teachers to determine if course success could be predicted by strengths and weaknesses of reported learning strategy use. If differences existed between successful and unsuccessful student scores, a second purpose was to identify strategies used by the successful students. The specific research questions addressed were:

1. What learning strategy patterns are reported by preservice teachers and how do these compare to the established norms of the LASSI?
2. How do learning strategy patterns of preservice teachers vary according to specified GPA groups?
3. What were relationships between learning strategy patterns and course grade?
4. Do gain scores from entry to exit vary according to GPA group membership?

Method

Subjects and Assessment

The subjects (n=90) were enrolled in two sections of a sophomore level educational psychology course in an open-admission university. Approximately 68 percent of these students were female. The course is required for all preservice teachers although most students had not applied for admittance to the College of Education prior to taking the course. The GPA breakdown for all sections are shown in Table 1.

Table 1
Subjects by GPA Categories

GPA Category	Percentage of Class
3.6–4.0	12.2
3.1–3.5	23.9
2.6–3.0	36.1
2.1–2.5	22.4
< 2.0	5.4

Instruments

Survey. During the first week of the semester, students were given a preassessment which consisted of questions about their perceived expectations for performance in the course, course difficulty (Likert scale ranging 1-7 with 1 low) adequacy of learning strategies for making an A or a B (Likert scale 1-7), and GPA.

LASSI. The LASSI (Weinstein, Palmer, & Schulte, 1987) was administered the first week of the course and the last week. The test consists of 77 items distributed across ten scales. Students respond to each item from "not at all typical of me" to very much typical of me." Items are scored on a likert scale of 1-5. Total scores are not used since the instrument was designed as a diagnostic one. Test-retest reliability coefficients on each of the scales run from .64 to .81. Several of the scales have been validated against performance measures. Scores on the "selecting main idea" scale have been compared to student's scores on selecting main ideas from texts and other readings (r=.40). The scoring manual provides a graph for raw scores on subscales to be converted to established norms in order to use established norms for comparisons (Weinstein, 1987).

Course Description

This course consisted of two large group sessions per week and one small group session. Major goals of the course were for students to learn the course content at application level and become effective learners themselves. The two primary evaluation criteria were five multiple choice exams and seven case studies. The grading system was criterion based allowing the first four exams to be retaken with the two grades averaged together. Learning strategy instruction was built into the course and consisted of:

Weekly strategy mini-lessons. These were presented in the large group sessions and were about fifteen minutes in duration. The lessons included: PQ4R (preview, question, read, recite, reflect, review) (Thomas & Robinson, 1972), goal setting, summarization, keyword and other mnemonics, and test taking tips.

STEPS To Successful Performance Manual (Alderman, 1989). This was a motivation and learning strategy manual developed for the course, providing expectations for performance and suggestions for motivational and cognitive strategy improvement.

Learning strategy labs. These were voluntary adjunct labs offered weekly to provide more extensive strategy training for students who opted to do this.

Learning logs. The purpose of the logs was to foster metacognitive awareness. Students wrote weekly about their learning strategies and received feedback every two weeks from their instructor.

Results

Survey

The preassessment data of rankings of course difficulty (1-7) and adequacy of learning strategies for making an A or B (1-7) found that the three upper GPA categories (from 2.6 - 4) rated course difficulty as 4.5 with the lower two groups rating it 4.7 and 4.9 respectively. All GPA groups except those below 2.5 rated adequacy of study skills for attaining an A or B above 5.5. Those below 2.6 rated adequacy 4.8 and 4.3 respectively.

Norm comparisons - patterns. What learning strategy patterns do preservice teachers report and how do these compare to the established norms of the LASSI? Entry and exit group mean percentiles are displayed in Figure 1 as they compare to the norms for the LASSI. Group means for the LASSI pretest showed that these students scored near the 50th percentile as compared to the norms presented on the LASSI graph. Group means for this population ranged between the 45th percentile and the 60th percentile. As a group the highest scores were on the Attitude and Concentration subscales followed by Time Management, Use of Study Aids, and Self Testing strategies. The lowest subscale score was Information Processing. Motivation, Anxiety, and Selecting the Main Idea subscale scores fell around the 50th percentile.

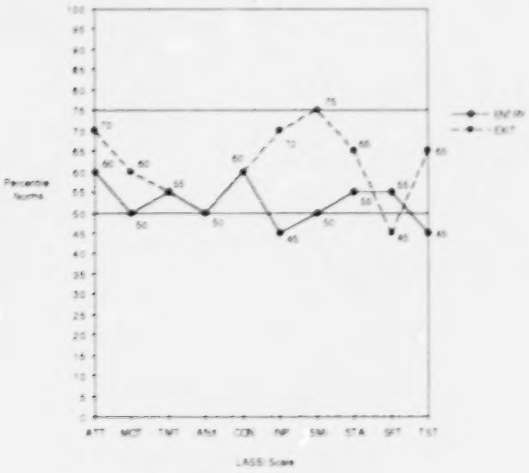

Figure 1. LASSI entry and exit mean percentile scores.

LASSI patterns by GPA categories. At course entry, do learning strategy patterns of preservice teachers vary according to specified GPA groups? A MANOVA was conducted to determine if there were significant differences among the four GPA groups on the 10 scales of the LASSI. The results indicated significant differences on six of ten scales. The Wilk's lambda approximate *F* value was significant $E(4, 69) = 7.60$, $p < .0001$.

Following a significantly different MANOVA, univariate analyses of variance were performed on each scale to determine which variables displayed significant mean differences. The variables with significant differences were: Attitude, $E(4, 69) = 4.91$, $p < .0015$; Motivation, $E(4, 69) = 3.21$, $p < .018$; Time Management, $E(4, 69) = 3.16$, $p < .02$; Anxiety, $E(4, 69) = 4.99$, $p < .0014$; Concentration, $E(4, 69) = 5.18$, $p < .0010$; Test Strategies, $E(4, 69) = 7.60$, $p < .0001$. Scheffe post hoc tests, with an alpha level of .05, were performed on variables showing significant differences. These tests indicated upper GPA groups scored higher than lower groups in all cases. On the Attitude scale, GPA 3.1 - 3.5 had higher scores than 2.1 - 2.5; on Anxiety, GPAs from 3.1 to 4.0 were higher than 2.0 - 2.5 ; on Concentration 4.0 scored higher than 2.1-2.5; on Test Strategies, 4.0 was higher than the two lowest categories, 2.1 - 3.0.

Of major interest to us is how means for each GPA category compare with LASSI norms. When means were placed on the normed graph (see Figure 2) each GPA group had a different pattern of learning strategy use. A very exaggerated pattern difference can be seen between students above and below a GPA of 3.0. This is consistent with results from the MANOVA.

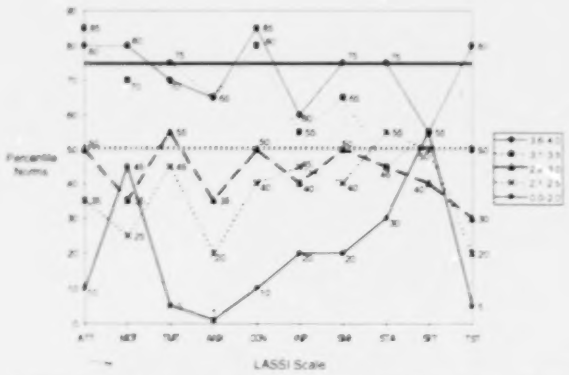

Figure 2. LASSI mean entry percentile scores for each college GPA level.

LASSI patterns and relationships to final course grade. What were relationships between entering LASSI patterns and course grade? A MANOVA was conducted to determine if there were significant differences among the course grade groups (A, B, C, D) on the 10 scales of the LASSI. The results indicated significant differences on three of ten scales. The Wilk's lambda approximate *F* value was significant $E(3, 63) = 3.60$, $p < .016$.

Having found significant differences using the MANOVA, univariate analyses of variance were performed on each scale to determine which variables displayed significant mean differences. To determine where these differences were, i.e. between which course grade groups, post hoc analyses using the Scheffe test were performed on variables where significant F-tests had been found. Those scales

with significant F's follow: Motivation, $F(3, 63) = 6.22$, $p < .0009$; Concentration, $F(3, 63) = 3.42$, $p < .022$; Test Strategies, $F(3, 63) = 3.69$, $p < .016$. For each of the significant differences (alpha 05), students who scored higher in the course had higher LASSI scale scores. On the Motivation scale, the A students had higher scores than both the C and D students; the difference in means were 6.064 and 7.014 respectively. For both Concentration and Test Strategies, A students had scores significantly higher than C students; the difference in means were 6.107 and 4.893 respectively.

Predictors of final grade. To determine which variable accounted for the most variance in final grade, each of the LASSI entry scores was regressed on the final grade. The only variable which accounted for a significant amount of variance was Motivation, $F(3, 63) = 9.763$, $p = < 0.0027$. No other LASSI variable contributed enough variance within the final grade to be significant.

When each of the LASSI exit scores was regressed on the final grade, this changed. Test Strategies accounted for a significant amount of variance in final grade, $F(3, 63) = 31.657$, $p < = 0.0001$; the R2 full model = 0.5482 and the R2 restricted model = 0.3857. When the regression procedure was used to test the amount of variance college GPA accounted for, it, too, was significant, $F(3, 63) = 17.6428$, $p = 0.0001$. R2 full = 0.4835 and R2 restricted = 0.3048.

Do gain scores from entry to exit vary according to GPA group membership? When pre- and posttest scores were plotted on the normed graph, students appeared to separate at the 3.0 level. GPA groups were then collapsed to two categories, greater and less than 3.0. To determine whether one GPA group or other gained more from entry to exit, multivariate pair-wise t comparisons was conducted. None of the scales produced a significant t indicating that neither category gained more than the other from entry to exit.

Discussion

What learning strategy patterns were reported by this population of preservice teachers and how do these scores compare with national norms? Weinstein (1987) reports that the 75th percentile is a common cutoff score for determining which students need intervention. Students between the 50th and 75th percentiles should consider improving relevant strategies in order to optimize performance, while those below the 50th percentile need to improve in order to have a chance of success in school. When LASSI subscale scores for this population were compared to the national norms, percentile mean scores ranged from the 45th to the 60th percentile. This indicates that, as a group, students are in need of some learning strategy improvement. The students were weakest in: Motivation - willingness to work hard and take responsibility for their own learning; Anxiety - degree of worry about school and performance; Information Processing - imaginal and verbal elaborations; Selecting The Main Idea - ability to pick out most important ideas; and Test Strategies - preparation for exams.

What do these scores mean for a group of predominantly sophomore preservice teachers? From survey of strategy adequacy and entry LASSI score, it appears that, as a group, these students were somewhat unaware of their learning strategy strengths and weaknesses in relation to course difficulty. On the survey, they rated adequacy for making an A or B as 4.3 or higher while 65 percent had a GPA below a 3.1. They tended to underrate course difficulty while overestimating their strategy proficiency. Although we did not determine previous learning strategy instruction of these students, in the Hulick and Higginson (1989) study, only 24 percent reported having had even limited instruction in any learning strategies prior to college.

In the present study, group means appeared to mask informative data. How did students vary across GPA groups? Once the entry scores were plotted by GPA group, variability among groups was evident. It appears that these students tended to separate into two groups, at the 3.0 GPA level. Although clear differences can be seen between these two groups on the motivational scales, the actual learning strategy means are more erratic and less definitive as seen in Figure 2. The erratic pattern on learning strategies may be an indication that students coming into this course lack a core set of learning strategies.

Which LASSI scores indicated differences by final grade? Three scales which showed significant differences by final grade were Motivation, Concentration and Test Strategies. On each of these three scales, students making an A had higher entry scores than other grade levels. According to descriptions of scales, these students are described as willing to work hard, accept responsibility for performing tasks related to course success, focus their attention on the task at hand, and know about characteristics of tests, test items, and test preparation.

How do end of course LASSI scores compare to beginning scores? For the whole group, all scales increased except Time Management, Concentration, Anxiety, and Test Strategies and no scales decreased. One important finding is that students above and below 3.0 GPA gained equally on the LASSI. Thus high and low GPA categories are in need of learning strategy instruction.

The patterns described in this study reveal that students entering teacher education cannot be assumed to possess a repertoire of effective learning strategies. Who needs intervention? From this data, it appears that almost all preservice teachers in this open admission university were in need of some degree of strategy intervention. For students at the upper GPA levels, more effective strategies will enable them to optimize performance as they proceed to upper level courses. Students at the lower GPA levels need more effective strategies to improve chance of success in college and to do more than "get through" their teacher education program. If preservice teachers are to become teachers of learning strategies, teacher educators must help them develop this repertoire.

1068

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1069

Presidential Address 1995

Minds-on and Hands-on Activity: Improving Instruction in Science for All Students

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Abstract

This paper briefly reviews evidence on gender inequities in science education. It argues that making science instruction more effective is one way in which greater equity can be achieved. A line of research conducted in my laboratory dealing with conceptual change (CC) approaches to science instruction is discussed. CC instruction explicitly activates students' pre-existing conceptions, leads students to be dissatisfied with less than adequate conceptions, and helps students construct more effective conceptions. Across several studies, CC instruction was found to be more effective than didactic instruction. CC features added to science text and science lessons facilitate learning for both males and females. Finally, I argue that in adopting new mathematics and science curriculum standards, it is important to recognize the need to promote CC and that "minds-on' as well as "hands-on" approaches are essential to effective learning.

Once upon a time, a quantitatively oriented cognitive educational psychologist set off on a journey to investigate and contribute something to research in science education. On that journey, he probably became a little less "objectivist," more appreciative of alternative research approaches, more aware of problems in teaching science, and of reasons for the under-representation of women and minorities in some domains of science. This paper is, in part, a story of that journey.

I have three purposes in this paper: (a) to highlight the problems of under-representation in some domains in science, (b) to discuss some of my research on the conceptual change (CC) model in science education, and (c) to highlight the need to include CC approaches in the emerging constructively oriented, activity- and manipulative-focused science curricula.

Let me begin by highlighting some data on under-representation in science. Because my research only involves gender, I will focus on gender under-representation, but I recognize that ethnic under-representation deserves equal emphasis.

A common stereotype is that women show less interest in science and that women perform less well in science. Like most common stereotypes, this one has a grain of truth but is less than entirely accurate. Matthews (1990) reported that women comprise about 45% of the bachelor's degrees in the life sciences and mathematics. Thus, gender differences are not large in these areas. However, women only receive about 35% of the bachelor's degrees in computer science, 30% in physical science, and 15% of in engineering. Clearly, a more serious under-representation occurs in the latter areas. Astin and Astin (1992) reported that about 50% of first year students and graduates in biology are women, but only about 35% of first year students and graduates in physical science and 20% of first year students and graduates in engineering are women. Vetter (1988) reported that approximately 12% of employed physical scientists are women, 22% of individuals employed in mathematical fields are women, and 25% of individuals employed in computer programming or scientist positions are women. The reason is not because there are no women applicants. Vetter (1988) reported that a higher proportion of women than men are seeking employment in these fields.

The math/science "pipeline" data also support gender under-representation. Berryman (1983) used the pipeline metaphor to represent the flow of students into careers that require substantial education in mathematics and science. Leakage from the pipeline was large. Of the 20% of all students who report some interest in science/mathematics careers early in high school, only 5% complete bachelor's degrees in these fields and only 0.2% complete doctoral degrees (Task Force on Women, Minorities, and the Handicapped in Science and Technology, 1988). Hilton and Lee (1988) reported gender related pipeline data from the "High School and Beyond" studies. About 20-25% of the males are in the pipeline in grade 12; this drops to about 5% of males graduating college in the sciences and 2-3% in graduate school. For females the comparable numbers are 7%, 2-3%, and 1-2%. Clearly, females represent a smaller proportion of the pipeline than do males. In one of the most sophisticated of the pipeline studies, Brookhart (1994) examined individuals who left, entered and persisted in the math/science/engineering pipelines. By the first year of college, only about two thirds as many females (10%) as males (15%) remained in the pipeline. Clearly, women are underrepresented in physical science occupations because fewer traverse the pipeline.

Why is it important that women elect not to pursue physical science or engineering fields? Here are three important reasons:

1. Physical sciences fields are correlated with higher paying positions in our society, thus, under-representation of women contributes to gender inequities in salaries paid to men and women.
2. It is likely that at least part of the under-representation of women represents structural biases that inhibit women from selecting physical science fields.
3. Science loses women's perspectives women's perspectives that may yield advances on some problems.

Why are there fewer women in science? Much research supports the notion that women receive less encouragement in the physical sciences and that the climate and approaches to

knowledge in the physical sciences may be less consistent with the average woman's characteristics than the average man's. Several sources report that both male and female teachers interact differently with boys and girls when teaching science and math. They call on boys more than girls. Compared to boys, girls are more likely to receive lower level questions and feedback that implies lower ability and provides excuses for mediocre performance (See Kahle & Meece (1995) for a comprehensive summary of research on gender differences in science education.) Keller (1982), Rosser (1986, 1990), and Rosser and Kelly (1994) argued that structural biases inhibit women from pursuing science and engineering. These biases included glass ceiling labor practices that prohibit women from reaching decision making levels, diminishing of "women's" scientific problems (e.g., menstrual cramps, breast cancer), use of males to represent the species, and sexual" harassment.

Women	Men
• Expansion of the types of observations used in science	• Fewer types of observations used in science
• Increasing the length of the observational period	• Shorter observational periods
• Acceptance of personal experience as part of scientific data	• Rejections of personal experience as part of scientific data
• Deeming women's problems worthy of research	• Focusing on problems related to men
• Including gender as part of scientific hypotheses	• Using men to represent the species, excluding gender as part of scientific hypotheses
• Adopting a more holistic approach to scientific problems	• Adopting a more narrow, less contextual approach to scientific problems
• Combining qualitative and quantitative methods	• Focusing on quantitative methods
• Greater use of cross-disciplinary research	• Less emphasis on cross-disciplinary research
• Including females as research participants	• Excluding females as research participants
• Awareness of race, class, sexual orientation, and religious biases	• Ignoring possible race, class, sexual orientation,and religious biases
• Theories that are relational, interdependent and multi-casual, instead of hierarchical and reductionist	• More reductionist, less situated theories
• Less competitive models of interaction between scientists	• More competitive models of interaction between scientists
• Greater emphases on research methods that emphasize participants/researcher interaction	• Emphasis on research methods that minimize research/participant interaction

Figure 1. Differences between typical women's and men's approaches to science.

Rosser (1990) argues that the epistemological approach of science is inconsistent with women's approaches to knowledge. As a result, the intellectual atmosphere of science is chilly to women. She argues for differences between typical women's and typical men's approaches to science (Figure 1).

I disagree partially with Rosser. The gender differences in ways of doing science are far less absolute than she implies and variance within genders is far greater than between genders (see pipeline argument below). However, she does make a case that typical differences exist and that many women, particularly in higher education, stop taking science because of incompatibilities in ways of knowing. Overall, the research literature is sufficiently strong to support the conclusion that differences in educational treatment, coinciding with differences in social expectations, contribute substantially to the under-representation of women in physical science.

As an aside, I will comment on one interpretation of the pipeline data. Rosser (1990) and others (e.g., Anderson, 1992; Bowen, 1990), have argued that the science education pipeline supports the hypothesis of differences in men's and women's ways of knowing. While there may be average gender differences in ways of knowing, differences between the genders are small relative to individual differences within the genders. Moreover, the pipeline data make clear that the overwhelming majority of both female and male students never enter or leave the science/math pipeline. How can the fact that over 90% of both males and females elect non-science/math careers be evidence of gender incompatibilities in ways of knowing? Perhaps the 90% plus of males who avoid science also prefer women's ways of knowing. If so, what justification is there for gender labeling such ways of knowing? I think Tobias' (1990) view, that both women and men in the "second tier" prefer alternative classroom approaches to those typically used in the physical sciences and engineering, is probably closer to the truth. But I don't want to belabor this point; a more important question to me is how to help all students understand science better and how to remove artificial barriers that may prohibit female students from considering or pursuing careers with mathematical or scientific underpinnings.

What should we do about gender inequities? Many reforms urged by feminist writers on science should work effectively for both female and male students. This section will focus on one reform related to my research. That reform is to teach science more effectively. Science often is taught in a way that makes it difficult for students to understand. Obviously, many dedicated elementary and secondary science teachers lead exciting and intellectually challenging lessons. However, I think that many students drop out of the science pipeline because they don't find science either exciting or understandable as it is taught.

Science classes often consist of students memorizing formulae to compute answers to word problems. Because there is little emphasis on providing students with a conceptual understanding of the underlying theory or on addressing students' preexisting ideas, students often don't understand the formulae. So students adopt an approach that one of my undergraduate assistants called "plug and chug." She described her performance in science classes as grabbing numbers from the problems, plugging them into some memorized formula, and chugging out an answer.

Such classes don't help students focus on developing conceptuerts reason first from conceptual, qualitative models before applying quantitative reasoning. One way to help students understand science more effectively may be to help them develop better qualitative models. In the science education literature, the approach called conceptual change (CC) has focused on helping students change their conceptual qualitative models. During the last several years, I have been conducting research on CC and science learning and education (see Wandersee, Mintzes, & Novak (1995) for a review of the CC literature).

Within the science education area, conceptual change is jargon for an approach that has its roots in Piaget's concept of disequilibrium and philosophical studies of Zeitgeist change or paradigm shift. The fundamental notion is that the learner can have pre-existing conceptualizations or knowledge structures that may be inconsistent with the knowledge structures the cultures of the subject matter domain have constructed. These pre-existing knowledge structures may interfere with the learner constructing new knowledge consistent with the culture that defines the subject matter. Put more simply, the learner may have beliefs that are inconsistent with the knowledge beliefs of subject matter experts. In this case, CC theory postulates that learners do not meekly abandon beliefs. Instead, they may reinterpret the presented message in a way consistent with their beliefs. Alternatively, learners may engage in a kind of double think and hold to prior beliefs, but memorize sufficient of the subject matter knowledge to pass school-based, inauthentic tests.

For example, many students believe that heavier things fall faster than lighter things. According to CC theory, students do not simply accept the physics statement that objects fall at the same rate. Rather, students memorize a formula, $s = 1/2\ gt^2$, which allows them to calculate how far an object falls in a given amount of time or how fast it is falling after so many seconds. They answer quantitative test questions correctly, but still believe that heavier things fall faster than lighter things.

CC theory holds that it is necessary to produce what Piaget called disequilibrium to encourage the student to construct a revised conceptualization. Posner and associates, in what is probably the best known version of CC theory, argue that education needs to induce dissatisfaction in the learner (Posner, Strike, Hewson, & Gertzog, 1982). Once the learner is dissatisfied, the instruction presents a new conceptualization that the learner will find intelligible, plausible, and fruitful. An intelligible, plausible, and fruitful description will lead the dissatisfied learner to construct a revised conceptualization.

CC theory argues that traditional instruction does not directly try to address students' misconceptions, but should. Activating prior knowledge and explicitly addressing and challenging alternative conceptions is necessary for the student to construct a revised, understanding.

My students and I began to investigate how to use CC in facilitating learning from text. The work was influenced by the early work of Roth (1984). Most work on CC had involved small groups and in-class instructional activities. Working with Charles Anderson, Roth adapted the Posner et al. (1982) CC approach to text. She included CC features in existing texts on how plants produce food. Compared to students using the original text, students using the CC texts were more likely to adopt CC thinking and construct understandings of plant and food consistent with botanist culture.

Reasoning that text in some form will always be an important component of instruction, we began to investigate how CC features added to text might help students construct more complete understandings of series and parallel circuits in electricity. In an early study, Wang and I (1991) modified an existing middle school physical science text to contain CC features. Our modifications were straightforward. Fredette & Clement (1981), Osborne (1983), and Shipstone (1984) had identified common misconceptions students had about series circuits. For example, a developmentally early misconception is called the sink conception. Students believe a single wire connection between a battery and a bulb will light the bulb because electricity flows like water from the battery to the bulb. To activate and challenge the students' misconceptions, we created a prototypical situation such as a picture of a battery and bulb connected by a single wire connection, and asked students to predict if the bulb would light. This is shown in the Figure 2.

Next, we directly addressed the misconception in the text by asserting, "Some students believe that a single wire connection between a battery and bulb will cause the bulb to light. These students are wrong." Then, as indicated in Figure 3, we presented evidence that the bulb would not light. We repeated this basic approach for each of the identified misconceptions. (Subsequently, we found that Alvermann and her colleagues had developed a similar approach that they called refutational text, e.g., Hynd & Alvermann, 1986.)

To control ability variance, we assessed students' verbal ability and obtained a measure of their experience with electricity. Because of my past research interests, we also included or did not include adjunct questions in text that students had to

1072

answer. The adjunct questions focused on calculations. So our independent variables were: two types of text (traditional versus conceptual change), presence or absence of adjunct questions, and gender.

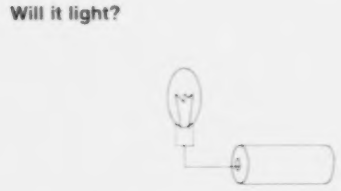

Figure 2. Question designed to elicit pre-existing conception from Wang and Andre (1991).

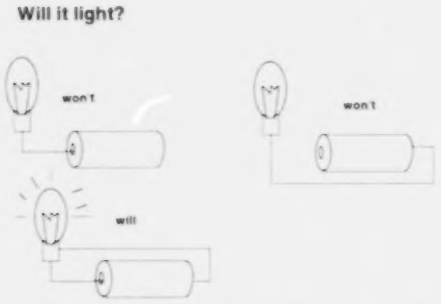

Figure 3. Example of dissatisfaction inducing text diagram.

What did we find? CC features produced a significant positive effect on conceptual understanding, but this main effect was modified by a Text Type X Question Type X Gender interaction. For men given adjunct questions and for women not given adjunct questions, the effect of CC text was positive. For women given adjunct questions and men not given adjunct questions, CC was neutral. We speculated that these effects were due to differences in motivation. Women have lower reported interest in physical science (Kahle & Meece, 1995). The adjunct question conditions imposed heavy task demands on students. Students with a lower level of interest may not have been sufficiently motivated to work very hard to meet those demands, but students with a higher level of interest may have been sufficiently motivated to meet the demands of processing adjunct questions and CC features. I wasn't satisfied with this explanation, but it led us to explore the relationship between interest and CC text.

In Chambers and Andre (1997), we replicated the Wang and Andre (1991) study but added a measure of interest in electricity along with the experience and verbal ability measures. The independent variables were gender and text type. We also modified the text and the posttest slightly.

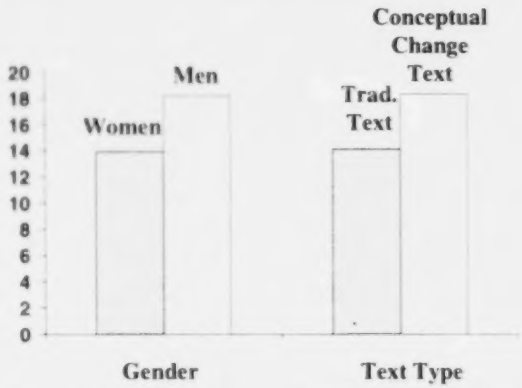

Figure 4. Gender and Text type main effects in analysis without covariates from Chambers & Andre, 1997.

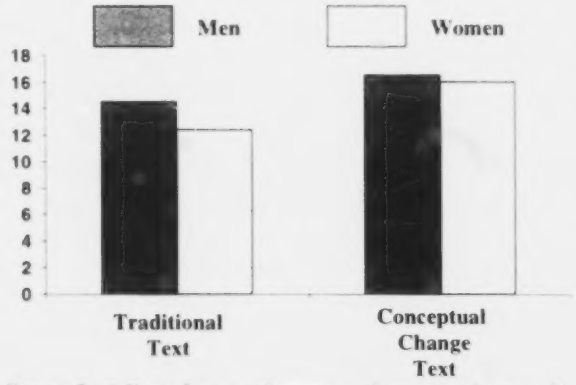

Figure 5. Adjusted means for men and women given traditional and conceptual change text in analysis with covariates (Chambers & Andre, 1997).

What did we find? We first analyzed the data without controlling for interest or experience. There were significant main effects of gender and text type. Figure 4 displays the means. Men apparently did better than women and CC text led to better performance than the traditional text. Next, we analyzed the data using a covariance analysis that controlled for verbal ability, experience, interest, and pretest knowledge. Only the main effect of text type remained significant (see Figure 5). CC text led to better performance than did traditional text for all students. In other words, when we did not control for interest and experience, men did better than women. When we controlled for pre-existing differences, women scored about the same as men.

We replicated these findings in a second study (Chambers & Andre, 1996). The same basic variables were included. Again, we first analyzed the data without controlling for pre-existing differences. This analysis yielded significant main effects for gender and for text type, again men apparently outperformed women and CC text led to superior performance.

When we controlled for preexisting differences, again only the effect of text type was significant. Again, gender differences in science learning seem to be due to differences in experience and interest.

In Chambers et al. (1994), we also found that controlling for the effects of verbal ability, prior experience, and interest eliminated a main effect for gender. In this study, we had five instructional conditions. The first was a traditional text on electricity. In the second condition, students received the traditional text augmented with more examples and diagrams. In the third condition, students received the CC text. In the fourth condition students received a CC text. However, instead of being told that circuits would or would not work, students were told to turn to a computer simulation that allowed them to build electrical circuits and to determine for themselves if the circuit would or would not work. Finally, in a fifth condition, students received CC text, but, after making predictions, were told to turn to actual light bulbs, batteries, and wires to test circuits.

On a delayed posttest, when interest and experience were not used as covariates, gender produced a significant effect. But when interest and experience were covaried, only the effect of CC condition was significant for females, but not males. Females receiving CC text did better. Figure 6 displays the means. The means for the men were quite high, and we might have failed to find an effect because of ceiling effects.

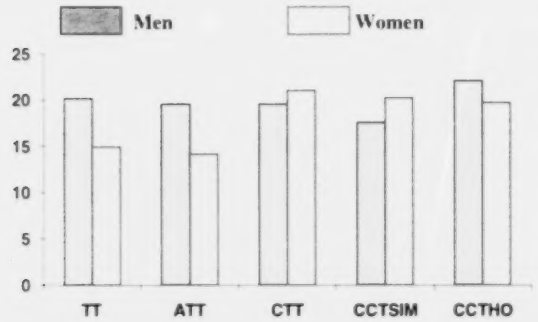

Figure 6. Adjusted means as a function of gender and condition from Chambers et al. (1994) TT-Traditional, Text, ATT-Augmented Traditional Text, CCT-Conceptual Change Text, CCTSIM-CCT with simulation, CCTHO-CCT with hands-on experience

One other of my studies supports these findings. Carlsen and Andre (1992) used CC texts in conjunction with computer simulations to help students learn about electricity. When prior experience was controlled, there were no gender differences and CC texts led to better performanc and women show similarities in how they learn science. In each of these studies, gender differences were found if pre-existing differences in knowledge, interest in, and experience with the subject matter were not considered in the analyses. When such differences were statistically eliminated, there were no gender differences in how men and women learned from CC text.

These results are consistent with the results of a study by Burbeles and Linn (1988). Burbeles and Linn found that boys and girls both profited from experiences that contradicted their prior expectations, but that, probably because of pre-existing experiential differences, girls required more contradicting experiences than did boys to reach the same level of understanding. Finally, a recent metaanalysis of CC approaches reported by Guzzetti, Snyder, Glass, and Garnat (1993) found significant and moderately strong effects of CC approaches. I think we can conclude that CC approaches do help both male and female students develop better conceptual understandings of physical science topics.

Recently NCTM and NSTA published new standards for science and mathematics teaching. These new standards argue that students should be involved in learning mathematics and science as a thinking activity. Learning to "mathematicize" or to "science", that is to use mathematical thinking to recognize patterns and solve meaningful problems or to use scientific procedures to investigate authentic problems, lie at the core of the new standards. Viewing the student as an active participant in the construction of his/her knowledge is central to the new standards.

I heartily encourage this approach and think that at least 50% of instructional time in science should be devoted to authentic investigative projects in which students do science. There are many lessons and curricula being developed which use this approach.

But I am concerned that we may miss the CC nugget in the gold rush to activity-oriented mathematics and science. Based upon their research with teachers, Anderson and Smith (1988) describe problematic activity-oriented and discovery-oriented teachers of science. Let me quote their descriptions.

The *activity-driven teachers* are "uncomfortable teaching science. These teachers focus primarily on the activities to be carried out in the classroom: textbook reading, demonstrations, experiments, answering questions, and the like. These teachers are unsure how specific activities contribute to student learning" (p. 100).

Discovery-oriented teachers "using activity-based programs try to avoid telling their students answers, encouraging them instead to develop their own ideas from the results of experiments. They ask their students to interpret their observations in open-ended ways, assuming that the performance of the experiments will eventually lead students to develop the appropriate scientific conceptions. In the absence of direct information and feedback from the teachers, however, students generally use their own misconceptions as the basis for interpretation of activities" (p. 100).

I am concerned that without an adequate understanding of conceptual change, the necessity to allow students opportunity and time to accommodate will not be given. Let me share a case reported by Champagne, Klopfer, and Gunstone (1985). Seventh graders were taught a unit on falling bodies using a conceptual change approach and much hands-on experience. But even after several weeks, some students continued to argue for their original preconceptions and propose other alternative experiments that might show that heavier bodies would fall faster

than lighter bodies. It was not a simple matter for the students to give up or change their preconceptions. Champagne et al.'s results demonstrated that these students would not have given up their preconceptions by simply exploring falling bodies. The students needed to have the teacher or the instruction point out the contradiction between their belief system and the results of their experiments. The students needed to be encouraged to create alternative qualitative models that encompassed their new observations. Teachers needed to be somewhat directive in facilitating students' thinking towards construction of an appropriate new model.

Conceptual change approaches can work in real schools. In 1993, with some colleagues, I conducted a workshop dealing with CC in the areas of motion and electricity for middle school teachers. After studying CC, teachers planned CC lessons for their students based upon the workshop materials (electricity and motion simulations and hands-on kits). In the following academic year, the teachers taught the lessons to their pupils. Their students displayed a more advanced conceptual understanding of motion and electricity compared to middle-school students taught with traditional lessons.

The CC approach is only one of many that can work to help students construct more adequate conceptual understandings in physical science. What features should lessons designed to promote conceptual understanding have? Such lessons should contain motivating and intellectually challenging activities that lead students to compare their preconceptions with the content being taught and direct student thinking towards constructing a revised conceptual model similar to the ideas of the culture of scientists. Such lessons emphasize developing the conceptual model before developing strength in quantitative analysis. Overall, the focus is on ensuring the instructional activities are minds-on as well as hands-on (I want to thank whoever first coined the wonderful minds-on phrase.) Certainly, authentic investigation activities are a critical component in reforming science education. But education should not adopt the obvious hands-on features of inquiry activity without incorporating the less obvious minds-on features. Effective instruction needs to incorporate CC features to achieve the full benefit of the proposed new standards. Instruction that incorporates these features can help to improve science education for all students and can thereby contribute to reducing gender and minority inequities in participation in science.

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1076

Conversations in Education

From Tourists to Citizens in the Classroom: An Interview with H. Jerome Freiberg

Mary R. Sudzina
The University of Dayton

H. Jerome Freiberg is Professor of Education, College of Education, University of Houston, and Director of the Consistency Management and Cooperative Discipline Project, Houston, Texas. Dr. Freiberg has published over 100 scholarly works including the books Freedom To Learn *(with Carl Rogers), and* Universal Teaching Strategies *(with Amy Driscoll), and is editor of the book* School Climate: Measuring, Improving, and Sustaining Healthy Learning Environments *(in press). He is also editor of the* Journal of Classroom Interaction. *Dr. Freiberg received the 1988-89 University of Houston's Teaching Excellence Award, and the College of Education's 1996 Research Excellence Research Award. Dr. Freiberg was recently named a John and Rebecca Moores University Scholar.*

***Q*: Dr. Freiberg, you've successfully applied Consistency Management & Cooperative Discipline (CMCD) with students in some urban schools. How does CMCD differ from other approaches to dealing with inner-city students?**

***A*:** CMCD challenges a number of assumptions about children and youth who live and go to school in the inner-cities. There are too many controls and not enough opportunities for students to build self-discipline.

The goal of most teachers is to encourage self-discipline, but the path many teachers take to this goal is misdirected. Too often the cooperation teachers seek from students to create order does not allow for real engagement in the learning process. Teachers find themselves imposing their requirements for order without relating to the student need to become members of a learning community. Discipline becomes mandated rather than developed. The differences between building self-discipline and imposing discipline is the balance point between the traditional classroom and a person-centered learning environment. A person-centered classroom benefits both teacher and student.

Too often classrooms are teacher-centered. When classroom are teacher-centered, students loose out on opportunities to have meaningful participation. I liken this to being "tourists" in the classroom. Students become tourists, passing through schools and classrooms without engaging in or positively influencing their learning environments. The CMCD program encourages students to become "citizens" of the their classrooms and school, taking responsibility for each other and the place of learning that they enter each day. The schools that foster academic and social citizenship have these qualities of active learning environments, and students become stakeholders in their own learning.

***Q*: What would that look like?**

***A*:** The following figure, which appeared in *Freedom to Learn*, shows the distinctions between the two types of learning environments (See Figure 1). A person-centered environment in the Rogerian sense is one that includes and benefits both teacher and students.

Teacher-Centered	Person-Centered
Teacher is the sole leader	Leadership is shared
Management is a form of guidance	Management is a form of oversight
Teacher takes responsibility for all paperwork and organization	Students facilitate operations of the classroom
More students are "tourists" than "citizens"	More students are "citizens" than "tourists"
Discipline comes mostly from the teacher	Discipline comes mostly from the self
A few students are the teacher's helpers	All students can become an integral part of classroom management
Teacher posts the rules	Teacher and students develop rules in the form of a classroom constitution or Magna Carta
Consequences are fixed for all students	Consequences reflect individual differences
Rewards are mostly extrinsic	Rewards are mostly intrinsic
Students are allowed limited responsibilities	Students share in classroom responsibilities
Students see only people who are paid to be in school	Schools recruit business and community members to enrich opportunities for students and present positive role models for students

Adapted from Freedom to Learn (3rd ed.) by C. Rogers and H. J. Freiberg (1994, p. 240) Used with permission of H. J. Freiberg (1997)

Figure 1. Teacher-centered classrooms vs. person centered classrooms.

Self-discipline is built over time and encompasses multiple sources of experiences. There is no one path, model, or program that will lead to self-discipline in all students. Self-discipline requires a learning environment that nurtures opportunities to learn from one's experiences, including mistakes, and to reflect on these experiences.

When students are engaged and involved and teachers and students see each other as partners, the instructional climate improves for both teachers and students. When students become more self-disciplined and teachers have greater management and discipline repertoires, referring students to the office becomes unnecessary or the last resort. The CMCD program changes the learning environment by asking students and teachers to collectively establish the climate in which they will teach and learn. We provide the organizational and instructional tools to help create this environment; it is up to the teachers and administrators to adapt and adjust to their own local needs.

***Q*: You've spent the last decade looking at learning environments in school and achievement with "at risk" youth. What are your conclusions? What works?**

***A*:** From my experiences working with urban schools, teachers, and students, I would suggest the following:

- Create smaller classes to better support children who have increasing social needs. Most secondary schools have 100-200:1 student/teacher ratio's which can lead to increased discipline and management problems.
- Implement much higher standards for the preparation, recruitment, and hiring of teachers. Most states have higher standards and training requirements for hairdressers and animal doctors. According to the 1996 National Commission Report on Teaching and America's Future, more than 12% of newly hired "teachers" enter the classroom without any preparation and 15% enter without having fully met state standards. Thirty percent of secondary mathematics teachers do not have a college minor let alone a major in their fields.
- Create safer and more caring learning and teaching environments. According to the 1996 U. S. Department of Justice, Office of Juvenile Justice and Delinquency Prevention Study juvenile homicide rates (12-17 year olds) have increased 95 percent from 1980 to 1994. In 1994, law enforcement agencies arrested 2.7 million youth under the age of 18. The study reports twelve percent of students in grades 6-12 reported being victims of bullying, physical attack or robbery and 56 percent of the students surveyed reported witnessing such acts. Democracy cannot grow or flourish when youth live in fear. A climate of violence, intolerance, apathy, isolation and dissolving families leads many youths to have a blank vision of the future.
- Refurbish school building infrastructures throughout the nation. Schools are literally collapsing. In Houston, it was the roof an elementary school which collapsed onto the cafeteria one week before school opened. In West Virginia, the exterior brick wall of a high school in Preston County collapsed one month prior to the start of the new school year forcing the school to be permanently closed.
- Encourage greater parental support in providing children that are self-disciplined and able to learn with other children. Babies don't come with a parents' guide. In Arkansas, new mothers who receive state aid also receive extensive support in acquiring the knowledge and skills needed for raising a healthy child. Child abuse has soared in the last decade. We have learned that early intervention is the key. There is a need for all parents to have the opportunity to receive education on raising healthy children.
- Balance reform so it is not always additive. Nothing is taken away from the impacted school curriculum — only added. Teachers by necessity either ignore the new reforms or begin reducing parts of the curriculum in a haphazard fashion. Changes in the curriculum need to be comprehensive rather than piecemeal.
- Reform efforts need time to occur. We tend to plant "trees of innovation," but not allow them time to take root. We keep pulling up the trees and are puzzled when they haven't taken. Veteran teachers quickly learn that they can outlast the latest "changes" because next year brings another program to reform schools.
- Most importantly, we must listen to the students; they have a keen sense of the problems and many of the solutions. In one inner-city middle school, students representing a wide range of views were asked about solving the graffiti problem in bathrooms. The students suggested that each wall be given to a different grade level to paint a mural. They also suggested a large panel be painted and placed over the wall, enabling new students entering each year to have their own wall to paint.
- Build reform on replicable research. Too often one study with limited generalizability or faulty design is used to support educational policy. Walberg (1986) cites the impact of a flawed study showing open education did not improve learning compared to traditional education. The study was reported in the *New York Times* and other media sources. The study findings were retracted, but only after significant damage had occurred and new policies were developed.
- Reduce the half-life factors of improving schools. A study we conducted of an improving inner-city elementary school that moved from the lowest 5 percent in the state in academic achievement to receiving the Governor's excellence award four years later lost its Chapter I Federal funds due to higher achievement scores. It also lost extra district funds for the same reason. Improvement for this school became a disincentive.

***Q*: AACTE recently targeted five promising practices in teacher education for 1996 and the CMCD program was one of them. A CMCD project was also highlighted**

in the front page of the *Houston Chronicle* in December, 1996. Can you tell me more about this?

***A*:** Both the AACTE recognition and the article which appeared in the front page of the December 1, 1996, *Houston Chronicle* ("Sparing the Rod: Student self-discipline shifts burden for classroom order") indicate a growing awareness of the importance of new ways to approach the realm of classroom environments. I received a request from AACTE to present an overview of the Consistency Management & Cooperative Discipline Program at the Education Commission of the States' 1996 National Forum and Annual Meeting July 2, 1996. I was to be at an international conference in Israel at the time and Dr. Alma Allen, an elected member of the Texas State Board of Education, presented on our program. She has been a strong advocate for the CMCD program.

The newspaper article reflects the realization of many in the city that before any reading and mathematics programs can be introduced a climate for active and productive learning must be in place. Most of the newer more contructivist curriculums emphasize an active interface between the students and the curriculum. However, the management system used in most classrooms reflects a teacher-centered model of order.

***Q*: Could you give me an example?**

***A*:** Yes, the following figure also appeared in *Freedom to Learn* and shows how classroom management must change to reflect changes in instructional models (See Figure 2).

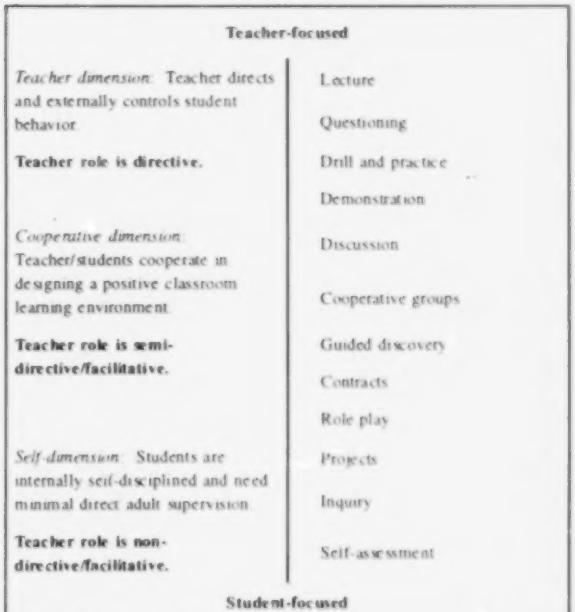

Figure 2. Classroom management reflecting instructional models.

***Q*: How did you come to work on the book *Freedom To Learn* with the humanitarian and psychologist Carl Rogers? Why is the message of this book, first published over two decades ago, still contemporary today?**

***A*:** I worked with Carl Rogers on the second edition of *Freedom to Learn* in the early 1980's. I was asked to update his original 1969 edition with additional cases and current research. When he died in 1987 I was asked by the publisher and his daughter, Natalie Rogers, to revise *Freedom to Learn* into a third edition. The project took nearly three years. I visited secondary schools in Chicago, Philadelphia, Houston, and New Orleans, and I included a colleague's work in San Diego to form the first chapter: "Why Kids Love School". It is very evident that schools can build resilience in inner-city children. Many of Rogers' frameworks are evident in what learners in the inner cities need to be productive citizens in a democratic society.

***Q*: *Freedom to Learn* was translated into Spanish in 1996 and the Soros Foundation is providing resources for it to be translated into Russian and placed in 15,000 libraries. Why do you think there is an international interest in your and Rogers' work?**

***A*:** Many of the principles presented in *Freedom to Learn* are universal. Children across the world and their teachers have similar needs to enable them to work and learn in healthy learning environments.

***Q*: This past summer you were invited to speak in Israel with David Berliner, Lee and Judy Shulman, Martin Haberman and Eliot Eisner. Are other countries that you've visited confronting similar educational and social issues?**

***A*:** I have worked with educators in Italy, Spain, England Netherlands and Israel. These countries are beginning to see a deterioration of the family structure and subsequent problems with children. England, for example, has a higher child poverty rate than the United States. France has a similar child poverty problem as the U.S. Italian secondary teachers in small towns and rural schools cited student motivation and parent involvement as the their greatest concerns. I have also found a common thread of lowered expectations in inner-city schools throughout the world. Believing that children of poverty can learn is a prerequisite to learning. We have been asked to start our CMCD program in several European countries to help schools become resilient, rather than another risk factor in the lives of children.

***Q*: What is your educational prognosis for the future?**

***A*:** I actually have more hope now that we can improve learning for our youth as I see real change and improvement in some of our inner-city schools. What I know after spending much time in urban schools is that we need to think differently about students and their learning. We can't change for the better continuing to think in the old ways.

Teachers need to be given better tools for meeting the needs of children and youth and meet their own needs. Educational reforms must begin at the classroom or micro levels and work toward the broader messo and macro levels. Too much of what has occurred to date has had minimal impact on the classroom. If we refocus our efforts to make schools and classrooms a place for citizens, not tourists, then we will begin to see real and sustainable improvement.

1079

Research Results

Consistency Management & Cooperative Discipline Program

H. Jerome Freiberg
University of Houston

We've conducted a series of longitudinal studies to determine outcomes of the Consistency Management & Cooperative Discipline program. The findings are very promising. For example, students of teachers using the program in low-performing inner-city elementary schools earned scores that are statistically significantly higher on national standardized tests and state-criterion reference tests than comparison students. Three years after their schools began the program, students with CMCD teachers gained on average three-quarters of a year's achievement over comparison students.

Four years after the program had been in use, we found statistically significant differences in how students viewed their learning environments. Based on survey data, students in the program perceived their environments to be more positive than comparison students. In addition, the following were all significantly higher for program students than for comparison students: student involvement, task orientation, class order and class rules, instructional learning environment, teacher expectations, and achievement motivation and academic self-concept.

Program schools also document significantly fewer classroom problems and discipline referrals to the principal's office. Before beginning the program, an inner-city elementary school with only 276 students had 109 student referrals to the office during the school year. A year after the program, there were 19 discipline referrals, 9 of which were from substitute teachers. Further, the rate of suspensions five years later of non-program students was double that of students whose teachers used the program.

A similar pattern is evident in two intermediate rural schools. Over three years, discipline referrals were down 40-60 percent, and students made statistically significant gains in achievement. Both schools won awards for academic excellence.

When implemented school wide and throughout a feeder pattern of schools (K-12), Consistency Management & Cooperative Discipline becomes a collaborative enterprise in which teachers and administrators help students move toward self-discipline as they progress through their school years. The program is currently being replicated with nine additional inner-city schools, including elementary, middle and high school. Two elementary schools have had the program since 1993-94. In these schools, student discipline referrals to the office are down 78 and 72 percent respectively. The middle school to which the elementary schools send their students also had the CMCD program. An external evaluation showed that skipping class, fighting, disruptions, defiance and disrespect and assaults dropped from 76 percent to 24 percent. The greatest drop was in assaults of students and teachers by students, which was reduced by 76 percent in one year.

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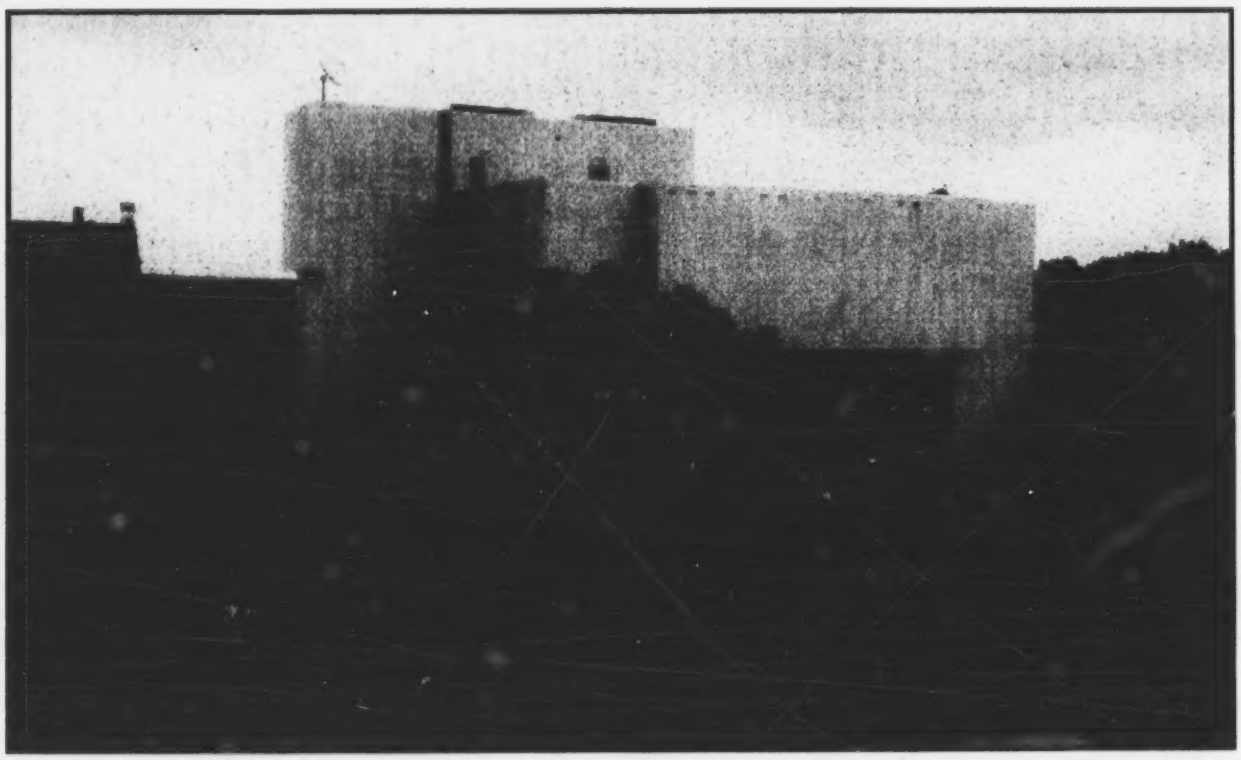

Kansas State University

Special Program Issue

October 15 – 18, 1997

1084

On The Cover

Kansas State University

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The College of Education at Kansas State University

The College of Education at Kansas State University is the largest teacher preparation unit in the state, enrolling nearly 2,000 undergraduate and about 1,000 graduate students each year. The college offers certification in 40 areas, with two undergraduate degree programs, six master's degree programs, and nine doctoral degree programs.

These efforts are guided by 64 full-time tenure track faculty, 11 full-time non-tenure track faculty, 45 part-time and temporary faculty, 37 graduate assistants, and nine clinical instructors. The full-time faculty are assigned, on average, slightly over 60% of their time to teaching, with the remaining time dedicated to research, development, and professional service. Of tenured and tenure-track faculty, 94% hold doctorate degrees and 95% have P-12 experience. Also, they produce more than 200 publications each year, serve as officers or board members of about 25 professional organizations, and serve as editors or editorial board members of about 25 professional journals. In addition, the faculty has participated for 25 years in a national database on student ratings, and faculty members are consistently rated by students above nearly 85% of all university faculty in quality of instruction.

The KSU College of Education is strong, not only in academics and research, but also in extramural funding. Faculty members have received more than $13 million in external funding for research, technical assistance, and development over the past five years. The Midwest Desegregation Assistance Center, supported by the U.S. Department of Education, provides assistance to school districts in a four-state area on equity issues involving race, gender, and national origin. Another project, funded by the DeWitt Wallace Reader's Digest Foundation, is an effort to provide a national database for facilitating school-to-work transition. Also, Social and Rehabilitation Services supports a project to develop multimedia instructional programs to teach parenting skills, child care, and support for children in school-related matters.

Through all of its programs, the KSU College of Education is committed to preparing knowledgeable, ethical, caring educators who will serve students now and into the 21st century.

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8 1/2 x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscripts will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Deborah L. Bainer, *MWER* Co-Editor
1680 University Drive, Ohio State University at Mansfield, Mansfield, OH 44906

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MID-WESTERN EDUCATIONAL RESEARCHER

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Board of Directors, Association Council, Program Committee 2
Conference Proposal Reviewers 3
General Information 4
Events and Highlights 4
Getting to the Conference 5
Conference Schedule:
Wednesday
Workshop Sessions 6
Kick-Off Speaker 7
Call for Nominations 7
Thursday
Council and Division Meetings 8
Keynote Speaker 9
Research Sessions 9
Featured Session 14
Friday
Roundtables 17
Exhibits 18
Research Sessions 18
Luncheon Keynote Speaker 20
Invited Speakers 23
Hotel Reservation Form 24
Meeting Registration Form 25
President's Reception 29
Saturday
Research Sessions 30
Presidential Address 31
Subject/Session Index 34
Participant Index 36
Conference At-A-Glance 46
Hotel Map inside back cover

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1086

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1087

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New Member Welcome
Linda Bakken, *Wichita State University*

MWERA '97 Conference Proposal Reviewers
The 1997 MWERA Program Committee wishes also to express our appreciation to the following individuals who donated their time to assist in reviewing proposals:

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Note to Presenters

M-WERA will be providing overhead projectors for presenters to use. You may bring other AV equipment with you, OR rent it from the hotel. Additional AV equipment may cost $100.00 to $200.00 per item. Additional AV needs should be directed to Sharon McNeely.

1088

General Information

Registration: Everyone participating in or attending the M-WERA annual meeting must be registered. Those planning to attend are encouraged to pre-register for the conference, workshops, and to make hotel reservations as soon as possible (pre-registration and hotel reservations must be received by September 15, 1997). Registrations mailed after September 15 may not be received in time for processing, and on-site payment in the form of cash or personal checks will be expected. If double payment is later determined, a refund will be issued. On-site registration and packet pick-up will be available on the 14th Floor of the Holiday Inn Mart Plaza at the following times:

Wednesday, October 15, 11:00 a.m. - 4:00 p.m.
Thursday, October 16, 8:00 a.m. - 4:00 p.m.
Friday, October 17, 8:00 a.m. - 4:00 p.m.

Name tags should be worn to all sessions (including workshops) and must be worn for admission to the conference luncheon on Friday.

Membership provides reduced conference registration fees and a subscription to the M-WERA official publication, the Mid-Western Educational Researcher. Those attending the conference are encouraged to join. Conference presenters must be paid members for 1997.

Selected M-WERA publications are available through pre-registration. These include the Directory of M-WERA members for $7, the M-WERA 1997 Meeting Abstracts for $4 paper, and $3 IBM computer disk. These publications may not be available at the conference unless ordered through pre-registration. If they are available at registration, cash or checks will be accepted.

M-WERA lapel pins are available again this year. The pins are your way to show others that you support M-WERA, and they add to your attire. These stylish pins were made available to us at a special discount, and we have passed along that discount to you.

This year's **Exhibit Hall** will feature publishers and others providing materials and services to educators on Friday, in the 14th Floor Lobby West. We have added a sharing table for you to bring job announcements, fill out mentor forms, and share other information which helps all of us. Plan on stopping by between 9 a.m. and 4 p.m.

Events and Highlights

Dr. Robert Shoop will be the featured speaker during our Wednesday evening session (Session 7). Dr. Shoop will be presenting his recent research in a session entitled, "The Legal Context of Sexual Harassment in Education". You may join in on Wednesday evening from 8:00 p.m. until 10:00 p.m. in the Sauganash Ballroom East.

M-WERA Association Council will meet from 7:30 a.m. to 8:50 a.m. on Thursday morning in the Western Stage House (Session 9). All Association Council members are expected to attend.

New Member Welcome takes place from 7:00 a.m. to 7:50 a.m. on Thursday in the Steamboat Hotel (Session 8). Linda Bakken will chair this informal session. All M-WERA members and conference participants are welcome.

Division Meetings will be held from 9:00 a.m. to 9:50 a.m. on Thursday morning (Session 10). All M-WERA members are encouraged to attend as plans are made for the 1998 conference.

Dr. Jack Levin will present our keynote address from 10 a.m. to 10:50 a.m. on Thursday in the Sauganash Ballroom East (Session 11). His topic will be "Youth Violence Goes to School".

The editors of the Mid-Western Educational Researcher, Deborah Bainer, Gene Kramer, and Richard M. Smith, will hold a **"Meet the Editors" session** on Thursday from 3:00 p.m. to 4:20 p.m. in the Mansion House (Session 30). Those interested in learning about publishing opportunities are encouraged to attend.

The Cracker Barrel Social will take place from 6:00 to 8:00 p.m. Thursday in Button's, a private room off of Mad Anthony's Lounge on the 15th Floor (Session 39). This informal event offers a chance to relax, mix, and mingle. A cash bar will be provided.

M-WERA General Business Meeting will be held from 8:00 a.m. to 9:20 a.m. on Friday in the Sauganash Ballroom East (Session 40). All M-WERA members are urged to attend.

Dr. James Boyer will be the featured speaker at the conference luncheon Friday in the Sauganash Ballroom East from 11:00 a.m. to 1:20 p.m. (Session 52). Dr. Boyer's address, "An Update on Research Regarding Multicultural Education" will examine issues related to diversity in educational research. This luncheon is free to all pre-paid full conference registrants. If you register after September 15 or on-site, lunch may be available, but is not guaranteed.

On Friday from 3:00 p.m. to 4:20 p.m. in the Western Stage House, a **M-WERA Special Forum** will feature a discussion about the effects of policies on classroom motivation (Session 69). The distinguished panel will include motivation researcher Martin Maehr, assessment directors Merv Brennan and Carole Perlman, and other policy-makers and teachers. Another **M-WERA Special Forum** will be held immediately after, from 4:30 p.m. to 5:20 p.m. in the Western Stage House. This open forum will include opportunities for teachers and researchers in the Midwest to form collaborative partnerships (Session 72).

President Sharon McNeely will host the **President's Reception** on Friday evening from 9:00 p.m. to midnight in the Wolf Point Ballroom on the 15th Floor. (Session 76). Beer, wine, soft drinks, and complimentary hors d'oeurves will be served.

The **M-WERA Conference Program Committee** will meet with Vice-President Tom Parish and Vice-President Elect Jeffrey Hecht on Saturday from 7:30 a.m. to 9:20 a.m. in the Western Stage House (Session 77). All 1998 Division program chairs and co-chairs are encouraged to attend and discuss the 1997 conference and make plans for the 1998 conference.

Sharon McNeely will make her **Presidential Address** on Saturday morning from 9:30 a.m. to 10:50 a.m. in the Steamboat Hotel (Session 87).

Getting to the Conference

Holiday Inn-Mart Plaza
350 North Orleans Street
Chicago, IL 60654
(312) 836-5000

O'Hare Airport to the Holiday Inn (3 Options)

1. **Take a CTA train** to downtown for about $1.50. Catch the train in the basement of Terminal 3. Take an A or B line. Get off at the Clark/Lake station. Transfer to the Brown Line (Ravenswood), and take this to the Merchandise Mart.

2. **Take the Continental Airport Bus** for $15.00 one way or $28.00 round trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.

3. **Take a cab** for around $28.00 one-way. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7-10 a.m., 3-7 p.m.) the ride could take an hour or more. Tips average 15-20%.

Midway Airport to the Holiday Inn (3 Options)

1. **Take a CTA train** to downtown for about $1.50. Catch the train at the east end of the airport. Get off at the Clark/Lake station. Transfer to the Brown Line (Ravenswood), and take this to the Merchandise Mart.

2. **Take a Continental Airport Bus** for $11.00 one way or $20.00 round trip. No reservations are required from the airport. See the agent at the booth for tickets.

3. **Take a cab** for around $25.00 one-way. Wait in the cab stand area. See O'Hare information above regarding time.

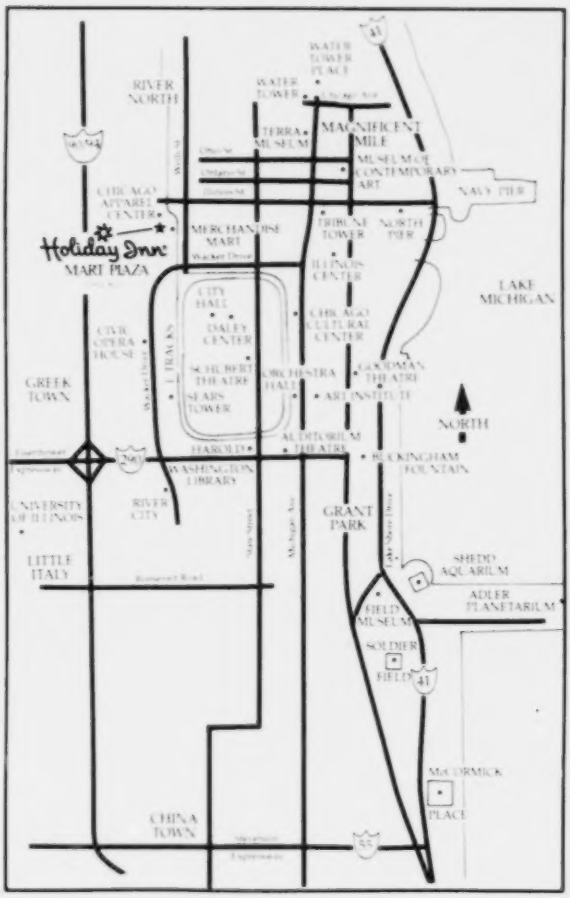
Driving and Parking Downtown (3 Options)

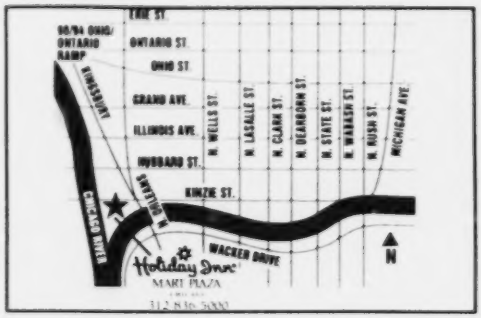
1. **From the South, East, or West:** Take I-90/94 (Dan Ryan). Exit at Washington Street East (Exit 51C), turn right on Washington. Go to Wacker Drive and turn left. Make another left at Orleans Street and cross over bridge. The hotel is on the left-hand side.

2. **From I-88:** I-88 connects to 290 (Eisenhower). Exit at Franklin Street. Follow Franklin until it turns into Orleans Street (just over the river). The hotel is on the left-hand side.

3. **From the North, I-90/94 (Kennedy Expressway):** Exit at Ohio Street. Go to Wells Street (3rd light). Turn right, cross the river and turn right onto Wacker Drive. Go 1 block, turn right on Orleans, and cross bridge. The hotel is on the left-hand side.

The Holiday Inn-Mart Plaza sits atop The Apparel Center. Take the Elevators on the first floor of The Apparel Center to the 15th Floor Hotel Lobby.





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Wednesday, October 15, 1997

Conference Registration
11:00 a.m. - 4:00 p.m. 14th Floor, East Lobby

WORKSHOP SESSIONS 1:00 p.m. - 5:00 p.m.

***Please refer to the workshop reservation information on the M-WERA Meeting Registration Form**

Session 1 **Bull's Head Room** **1:00 p.m. - 4:00 p.m.** **(Fee: $10)**	**Introduction to the General Linear Model: Applications for Beginning Users and Demonstrations of Teaching Techniques** The goal of this workshop is to demonstrate techniques for teaching multiple linear regression hypothesis testing procedures, while minimizing the need for mathematical computations.	Isadore Newman, *University of Akron;* Keith McNeil, *New Mexico State University*
Session 2 **Columbian House** **3:00 p.m. - 4:30 p.m.** **(Fee: $5)**	**Writing Computer Integrated Diverse Math Problems for the Twenty-First Century** The objective of this workshop is to help math educators of all levels learn to write diverse, interesting, motivating, and sense-making math problems; connect them to the experiences of the students; and learn to use the computer as a tool.	Mian Muhammad Yusuf, *Weber State University*
Session 3 **Lake House** **1:00 p.m. - 3:00 p.m.** **(Fee: None)**	**It's All Geek to Me: Understanding the Terms and Concepts of the Internet** The purpose of this workshop is to help individuals become familiar with the Internet and how they might utilize it for research and teaching. Participants will be exposed to the terms and concepts of the Internet through explanations and demonstrations of World Wide Web sites.	Abbie H. Brown and Timothy D. Green, *Indiana University*
Session 4 **Mansion House** **1:00 p.m. - 5:00 p.m.** **(Fee: $25)**	**Application of the Rasch Measurement** The purpose of this workshop is to serve as a general introduction to Rasch measurement through the dichotomous model. Focus will be on practical applications of the Rasch models: test design, test analysis, test equating, item bias detection, score reporting, and computer adaptive testing. Fee includes cost of book "Applications of Rasch Measurement."	Richard M. Smith, *Rehabilitation Foundations, Inc.*
Session 5 **Columbian House** **1:00 p.m. - 2:30 p.m.** **(Fee: None)**	**An Arts-Based Public Curriculum: A Description of the Research Taking Place at a Place for Ideas** Description of "A Place for Ideas", whose mission is to provide an environment that nourishes and promotes creativity and critical thinking and celebrates the development of creative products.	Ronald R. Morgan and Marlea Edinger, *Loyola University-Chicago;* Michael Boyle, *Highland Park High School;* Anna Taskedska, *Chicago Academy for the Arts*
Session 6 **Fork's House** **1:00 p.m. - 2:30 p.m.** **(Fee: None)**	**If We Always Do What We've Always Done... (Developing An Awareness of Students' Strengths and "Intelligence" Profiles)** This workshop applies the work of Gardner and the research results from a study of gender and developmental differences across the "multiple intelligences" conducted at Southwest Missouri State University, and applies that information in ways that have a direct effect on the daily lives of students and their teachers.	Karen Evans and David Brown, *Southwest Missouri State University*

(Please duplicate this page and distribute to your local schools.)

1091

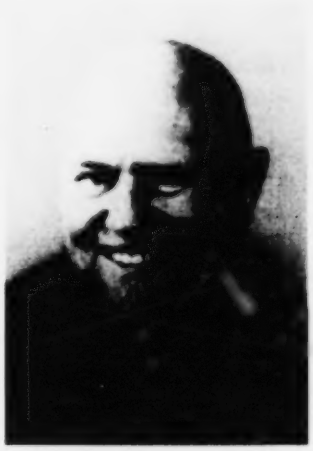
Wednesday, October 15, 1997

KICK-OFF SESSION **8:00 p.m. - 10:00 p.m.** **Sauganash Ballroom East**
Session 7

"The Legal Context of Sexual Harassment in Education"

Robert J. Shoop
Kansas State University

Preventing and remedying sexual harassment in schools and universities is essential to ensure a nondiscriminatory educational environment. The U.S. Department of Education has provided information regarding sexual harassment that is likely to be given deference by courts in lawsuits. This presentation provides a structure under which everyone in the educational community can understand their individual rights and responsibilities to prevent sexual harassment, and make decisions that will provide some protection from liability in the event of a law suit.



Professor of Educational Law at Kansas State University, Bob Shoop is the author of over 100 journal articles, ten books, and several national and international award winning video programs on eliminating sexual harassment. A recipient of the Excellence in Graduate Teaching Award and Kansas State University's Outstanding Undergraduate Teacher Award, he has consulted with national associations, universities, governmental agencies, businesses and schools throughout the United States. He frequently serves as an expert witness in sexual harassment cases, and is a recognized authority in the areas of educational law, risk management and sexual harassment prevention.

CALL FOR NOMINATIONS

The Nominations Committee will accept legitimate nominations of members for council or officer elections. The elections are held in early 1998. Nominations are being accepted for:

1) Association Council (2 year term runs late 1998 through 2000).
2) Member-at-Large to Board of Directors (2 year term runs late 1998 through 2000).
3) Vice-President (1 year term as Vice-President in late 1998, then becomes President-Elect the following year, President the following year, and Past-President the year after that.

Those nominated need to be paid members in good standing. If you are interested, or know someone who is, please contact prior to October 18, 1997:

Sharon McNeely
1996-1997 President
Northeastern Illinois University
P.O. Box 34421
Chicago, IL 60634
Voice: (773) 794-2788
HP: (773) 736-2340
Fax: (773) 736-7033
e-mail: S-McNeely@neiu.edu

Thursday, October 16, 1997

Morning Wake-Up and Coffee
7:00 a.m. - 8:00 a.m.
15th Floor Lobby

Conference Registration
8:00 a.m. - 4:00 p.m.
14th Floor, East Lobby

Session 8

New Member Welcome
Linda Bakken, Member-at-Large
7:00 a.m. - 8:00 a.m.
Steamboat Hotel

Session 9

M-WERA Association Council Meeting
Sharon McNeely, President
7:30 a.m. - 8:50 a.m.
Western Stage

M-WERA DIVISION MEETINGS **9:00 a.m. - 9:50 a.m.**

Session 10

Division A
Columbian House
Larry McNeal, Chair

Division B
Fork's House
James H. Powell, Chair

Division C
American House
Marlene Schommer, Chair

Division D
Bull's Head
Bruce G. Rogers, Chair

Division E
Sauganash Ballroom East
Eddie E. Glenn, Chair

Division F
Sauganash Ballroom East
Elizabeth Johnson, Chair

Division G
Lake House
Joan Timm, Chair

Division H
Mansion House
Kathy Sparrow, Chair

Division I
Sauganash Ballroom East
Pamela Kahlich, Chair

Division J
Sauganash Ballroom East
Jacqueline C. Rickman, Chair

Division K
Steamboat Hotel
Mary Bendixen-Noe, Chair

We can't be S__CCESSFUL without U!
So please plan to attend, and bring a colleague or graduate student
to the M-WERA Meeting in Chicago
from October 15-18, 1997!

Thursday, October 16, 1997

KEYNOTE SPEAKER

Session 11 **10:00 a.m. - 10:50 a.m.** **Sauganash Ballroom East**

"Youth Violence Goes to School"

Jack Levin

Northeastern University, Boston

Youth violence has been a growing problem in every sector of society, including schools. In response, many school systems around the country have institutionalized peer mediated conflict resolution programs. Although such programs are effective in limiting mundane and conventional forms of violence, they hardly touch the most dangerous and violence-prone youngsters. To be effective, violence prevention programs must be braodened to include after-school activities and expanded into the elementary school level. In addition, we must find some method for monitoring and supervising the behavior of students who are expelled or suspended for their violent conduct. Nothing less than a cultural revolution will do.

Jack Levin, Ph.D., is Director of the Program for the Study of Violence and Conflict and the Brudnick Professor of Sociology and Criminology at Northeastern University in Boston. He has authored or co-authored 18 books and published more than 100 articles in professional journals, magazines and major newspapers. Levin appears frequently on television programs such as *20/20, 48 Hours, Unsolved Mysteries, Today, Good Morning America, Larry King Live* and all major network newscasts. He has served as a consultant or expert witness in a number of trials and was recently named CASE Professor of the Year in Massachusetts.

RESEARCH SESSIONS 11:00 a.m. - 12:20 p.m.

Session 12	**"Places Where Teachers Work"**	**Paper Session (Division K)**
Western Stage **Chair:** RoseMary Scott, *University of Wisconsin-Parkside* **Discussant:** Stephen J. Blatt, *University of Dayton*	An Examination of Violence in Rural Schools	George J. Petersen, *Southwest Missouri State University*; Kathryne M. Speaker, *Yardley, PA.*
	Crossing Symbolic Borders: Choosing to Student Teach in an Urban Setting	Suellen Henke, *Miami University*
	Teaming in an Urban High School: Competing and Conflicting Teachers' Stories	Elizabeth Lokon, *Miami University*
Session 13	**"Field Experience and Teacher Education"**	**Paper Session (Division K)**
Steamboat Hotel **Chair:** Carole Newman, *University of Akron* **Discussant:** Jay Price, *University of Wisconsin-Stevens Point*	Cooperating Teacher Feedback Given to Early Field Experience Students in Collaborative On-Site Programs	Elizabeth A. Wilkins-Canter, *Eastern Illinois University*
	The Views of Students in an Early Field Experience: Mixed Messages	Tom Ganser, *University of Wisconsin-Whitewater*
	Training for Cooperating Teachers and University Supervisors in Their Role as Evaluators in Early Field Experiences	Hema Ramanathan, *Butler University*; Elizabeth A. Wilkins-Canter, *Eastern Illinois University*
Session 14	**"Alcohol and Other Substance Abuse Issues"**	**Paper Session (Division E)**
Mansion House **Chair:** Charlotte Batambuze, *Illinois State University* **Discussant:** Gabriella Caldwell-Miller, *Illinois State University*	Relational Issues of Chemically Dependent Mothers and Their Children: What Can We Do To Stop the Cycle of Addiction?	Eddie Glenn and Monique Manhal-Baugus, *Illinois State University*
	Total Elimination of Observable Middle School Tobacco Use: Effects of Individual Interventions	Daniel Lynch, *University of Wisconsin-Madison*
	Psychoeducation for Adolescents with Disabilities Regarding Alcohol and Drug Use	Eddie Glenn and Monique Manhal-Baugus, *Illinois State University*

1094

Thursday, October 16, 1997

RESEARCH SESSIONS 11:00 a.m. - 12:20 p.m.

Session 15 — **"Prediction and Equity Studies"** — **Paper Session (Division D)**

Columbian House

Chair:
Dick Tracy,
University of Kansas

Discussants:
Tianqi Han, *Northern Illinois University;*
E. Jane Williams, *The Ohio State University*

The Effects of Base Rate, Selection Ratio, Sample Size and Reliability of Predictors on Predictive Efficiency Indices Associated With Logistic Regression Models	Irina R. Soderstrom and Dennis Leitner, *Southern Illinois University*
Ohio Ninth Grade Proficiency Test Predictors	Susanne A. Granoff, *The Ohio State University*
Is "Does Money Make a Difference on School Achievement?" an Equity Question?: A Critique of the Answers Given, Methods Used and the Issues Involved	Jim C. Fortune, *Virginia Tech*

Session 16 — **"Instruments & Publications in Learning Research"** — **Paper Session (Division C)**

Bull's Head

Chair:
John Surber,
University of Wisconsin-Milwaukee

Discussant:
Orpha Duell,
Wichita State University

Flexible Combination: A Component of Cognitive Flexibility	Ronna Dillon, *Southern Illinois University*
Construct and Criterion-Related Validity of Flexible Comparison	Ronna Dillon, *Southern Illinois University*
Replicating an American Epistemological Belief Structure with Australian University Students	Marlene Schommer, *Wichita State University;* Keis Ohtsuka, Joe Mallamace, Marina Milonas, and Anthony Scicluna, *Victoria University, Australia*
Productivity of Educational Psychologists in Leading Educational Psychology Journals	M Cecil Smith, Susan G. Locke, Stephen J. Boisse, Peggy A. Gallagher, Lawrence E. Krengel, Judith E. Kuczek, Joe E. McFarland, Brunnehilde Rapoo, and Cheruta Wertheim, *Northern Illinois University*

Session 17 — **"Constructing Educational Biographies: The Process and the Product"** — **Paper Session (Division F)**

Fork's House

Chair:
Douglass Feldmann,
Indiana University

Discussant:
Patricia Williams-Boyd,
Eastern Michigan University

From the Classroom to the Battlefield: The Academic and Military Career of John L. Chamberlain	Ken McDougle, *Pittsburg State University*
Practicing Safe Text: Embracing Life Histories as Authentic and Responsible Text	Elizabeth Johnson, *Eastern Michigan University*

Session 18 — **"Innovative Service Delivery Systems Impacting Individual Differences in Postsecondary Education"** — **Paper Session (Division J)**

Lake House

Chair:
Avril von Minden,
Western Illinois University

Discussant:
Georg Gunzenhauser,
Western Illinois University

The Research Component in Graduate Teacher Education Programs: Asking the Stakeholders	Ruth Ravid, *National Louis University*
Postsecondary Students With Disabilities: Assessment, Attitude and Pragmatics	J. Rickman, T. Cody and T. Furman, *Western Illinois University*
Learning At a Distance: A Case Study of a Graduate Research Course	C. Sorensen, *Northern Illinois University;* D. Baylen, *Florida Gulf Coast University*
Factors Influencing Interest in Teaching As A Career: Implications for the Recruitment of Minority Students Into Schools of Education	Stanley Wigle and Joyce Kostelnik, *University of Tennessee-Martin*

Thursday, October 16, 1997

RESEARCH SESSIONS 11:00 a.m. - 12:20 p.m.

Session 19	"Issues of Caring"	Paper Session (Division G)
American House	Beyond Silence: Moral, Epistemological and Expressive Voices Found in Bullying Experiences of Adolescent Girls	Joan B. Lampert, *Northern Illinois University*
Chair/Discussant: Mary Ann Wham, *University of Wisconsin-Whitewater*	Diverse, Caring Community: Social Studies Centered in Moral and Multicultural Education	Gloria T. Alter, *Northern Illinois University*
	Piaget and Noddings: A Working Model Descriptive of Children's Caring	Rich Hofmann, *Miami University;* Beth Stephens, *Fairborn City Schools;* Lydia Hofmann, *Edgewood Schools*
	Parental Influence on Improving Student Success in Remedial Math Classes	Mary Ann Irwin, *Ball State University*

Follow-Up Session- Invited Speakers 11:00 a.m. - 12:20 p.m. Sauganash East

Session 20

"Sexual Harassment and Violence in America's Schools"

Robert J. Shoop, *Kansas State University*
Jack Levin, *Northeastern University, Boston*

A discussion on what sexual harassment and violence are doing to America's schools and prevention and intervention strategies to help ease these problems.

RESEARCH SESSIONS 1:30 p.m. - 2:50 p.m.

Session 21	"Teacher Education"	Paper Session (Division K)
Western Stage	The Care Work of Teachers and Nurses: Mutual Self-Realization, Unreasonable Demands, or Uninformed Choices	Judy Pickle, *Northern Illinois University*
Chair: Donna Barron, *University of Dayton*	Continuing Research on the Benefits and Challenges Perceived by Nongraded Multi-Age Teachers	C. Richelle O'Connor, *Bluffton College*
Discussant: Lenore Wineberg, *University of Wisconsin-Oshkosh*	Modeling Best Practices in Middle Level Education: Does It Make a Difference in What Teachers Believe	Cheryl K. Kish and Denise H. Daniels, *Northern Illinois University*

Session 22	"Judgements and Consistency"	Paper Session (Division D)
Mansion House	Utility of a Concept: Focusing Strategy on Judgmental Standard Setting Results	Melody Hertzog, Barbara S. Plake, James C. Impara, Gerald Giraud and Robert Spies, *University of Nebraska*
Chair: Gene Kramer, *American Dental Association*		
Discussants: Gordon White, *Southern Illinois University;* Terry Schurr, *Ball State University*	Consistency of Angoff-Based Predictions of ItemPerformance as a Function of Item Difficulty	Barbara S. Plake and James C. Impara, *University of Nebraska*
	Reliability of G-Wise Kappas for Multiple-Rater Agreements	Dimiter M. Dimitov, *Kent State University*

1036

Thursday, October 16, 1997

RESEARCH SESSIONS 1:30 p.m. - 2:50 p.m.

Session 23 — **"Perceptions, Attitudes and Teacher Education"** — **Paper Session (Division K)**

Steamboat Hotel

Chair:
John Zbikowski, *University of Wisconsin-Whitewater*

Discussant:
Judy Jackson May, *Bowling Green State University*

Exploring Teacher Job Satisfaction Across Years of Teaching Experience	Beverly Klecker, *Eastern Kentucky University;* William E. Loadman, *The Ohio State University*
The Literacy Orientation Survey: A Survey to Examine Teacher Beliefs and Practices as Related to the Principles of Constructionism	Mary Ann Wham, *University of Wisconsin-Whitewater;* Susan Lenski, *Illinois State University*
When Will I Be Ready? Preservice Teachers' Perceptions of Job Readiness: Replication of a Qualitative Study	James A. Salzman, *Ursuline College*

Session 24 — **"Developmental Issues Which Effect Parents and Children"** — **Paper Session (Divisions A and E)**

Columbian House

Chair:
Gabriella Caldwell-Miller, *Illinois State University*

Discussant:
Kathleen Kearns, *Illinois State University*

Influences of Parental Communication About Sexuality on Sexual Outcomes	Cheryl Sputa, *Eastern Illinois University*
Applied Experimental Evaluation of a Conflict Resolution Curriculum and Social Skills Development	Lea Roseberry and Ronald Morgan, *Loyola University-Chicago*
Developmental Differences in the Relations Between Participation in Extracurricular Activities and Adolescents' Academic Achievement	Natalie Dove and Sharon Paulson, *Ball State University*
A Statistical Approach to Deconstructing Parental Gender in Single Parented Households	Rich Hofmann, *Miami University*
Implications for Schools When African American Parents are Involved in School and Community	Delores P. Henry, *Buchanan Elementary School*

Session 25 — **"Education In the Professions"** — **Paper Session (Division I)**

Bull's Head

Chair:
Pamela A. Kahlich, *KJ Learning Partners, Inc.*

Discussant:
Dorothy Jensen *KJ Learning Partners, Inc.*

Admissions Process Change In A Life Sciences Graduate Program	Margaret A. Simpson, *Northwestern University*
Evaluating Teacher Portfolios: New Paradigms for Assessing Growth	Merrie Beth Fisher, *Indiana University*
Construct Elucidation- From Items to Meaning and Theory	Winifred A. Lopez, *International Survey Research*

Session 26 — **"Lessons Learned From State Funding of 561 School Improvement Models: The Ohio Perspective"** — **Symposium (Division H)**

Fork's House

Chair/Discussant:
LeAnn Derby, *The Ohio State University*

LeAnn Derby, William Loadman, Francine Michel, and Joyce Miller, *The Ohio State University- Columbus, OH*

1097

Thursday, October 16, 1997

RESEARCH SESSIONS **1:30 p.m. - 2:50 p.m.**

Session 27 **Lake House** **Chair:** Jim Powell, *Ball State University*	**"The Utilization of Internet Technologies in Distance Education: An Analysis of Issues, Perspectives, and Applications"**	**Symposium (Division B)**
	Enhancing Classroom Interaction in Distance Education: Utilizing the World Wide Web	Jay Thompson, *Ball State University*
	Expanding Elementary Curriculum and Classroom Interaction Through Internet Technologies	Brad Oliver, *Ball State University*
	Future Proofing of Faculty: Creating Technical Lifelong Learners	Fred Nay, *Ball State University*
	Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment	Nancy Saunders, *Ball State University*
	Observation of Instruction Via Distance Learning: The Need For a New Evaluation Paradigm	Bobby Malone, *Ball State University*
	Appropriate Educational Applications of the World Wide Web Today	Loren D. Malm, *Ball State University*
Session 28 **American House** **Chair:** Virginia Marion, *Ursuline College* **Discussant:** Sharon Latkovich, *Ashland University*	**"Alternative Education and Collaboration"**	**Paper Session (Division H)**
	Perceptions of Parents of Children With Disabilities Regarding School District Practices	Jane W. Andringa and David Suddick, *Governor's State University*
	Is Fluvanna's Project RETURN No Longer in Need of Evaluation? Will Politics Provide the Answer?	James C. Fortune, *Virginia Tech*; Wayne White, Delores Anderson, Linda Samuel, and James Hodges, *Fluvanna County Public Schools*
	Junior Achievement: Where Does It Fit With Business Education Collaboration?	Lisa Persinger and LaKeisha Bush, *Indiana University*
	Educating Teenagers on Issues of Sexuality: Teenage Sexuality and Pregnancy Prevention Program (TSAPPP) in the State of Ohio	Ann Marie Thomas and William E. Loadman, *The Ohio State University*
	Identification of Competency Areas Required of Vocational Evaluators: A Commissioned Need Assessment	Donna Waechter, *University of Akron*; Deborah Nolte, *Kent State University*; and Patricia Sitlington, *University of Northern Iowa*

M-WERA INVITED SPEAKER

Division A **1:30 p.m. - 2:50 p.m.** **Shakespeare Hotel**

Session 29

"The Leadership Challenge: Being in the Middle in the Middle of the School Reform Era"

Paul Baker

Illinois State University

Thursday, October 16, 1997

M-WERA FEATURED SESSION

Session 30 **3:00 p.m. - 4:20 p.m.** **Mansion House**

Meet the Editors of the *Mid-Western Educational Researcher*

Hosted by:
Deborah Bainer, *Ohio State University-Mansfield*
Gene Kramer, *American Dental Association*
Richard M. Smith, *Rehabilitation Foundation, Inc.*

RESEARCH SESSIONS **3:00 p.m. - 4:20 p.m.**

Session 31	**"The Changing Environment of Schools"**	**Paper Session (Division A)**
Western Stage **Chair:** A. William Place, *University of Dayton* **Discussant:** Margaret "Peggy" Simpson, *Northwestern University*	School Administrators' Perceptions of What Works In Reducing Violence in Schools	George J. Petersen, *Southwest Missouri State University*
	Joining Forces for Safer Schools: Public Schools and Law Enforcement Agencies	Barbara L. Brock, *Creighton University*
	School Administrators' Perceptions of Trends, Issues and Responsibilities Relating to the Modern Educational Climate	William L. Sharp, *Southern Illinois University*; James K. Walter, *Texas A & M University*
	Principals as Cultural Leaders: Implications for Preparation Programs	Carla Edlefson, *Ashland University*; Janet Wilson, *Westland High School*
Session 32	**"Content and Teacher Education"**	**Paper Session (Division K)**
Columbian House **Chair:** Maria Elena Galvez-Martin, *Ohio State University-Lima* **Discussant:** Charles Kent Runyan, *Pittsburg State University*	Shadowing Reading Specialists: Learning Through Cases Developed From the Field	J.C. Lambert and Michael P. Ford, *University of Wisconsin-Oshkosh*
	Students' Prior Knowledge and Perceptions of Computers: Implications for the Network Writing Classroom	Danilo M. Baylen, *Florida Gulf Coast University*; Gary McConeghy and Linda M. Watson, *Northern Illinois University*
Session 33	**"Discipline and Teacher Education"**	**Paper Session (Division K)**
Steamboat Hotel **Chair:** Jean Morrow, *Northern Illinois University* **Discussant:** Bernard Arenz, *University of Texas-El Paso*	Discipline By Negotiation: An Alternative Approach to Managing Discipline	Daniel R. Tomal, *Concordia University*
	Problematic Student Behaviors: A Shift In Focus	Barbara J. Witteman, *Concordia University*

The 1997 M-WERA Conference promises to be one of our most memorable yet!

Invite your Colleagues and Students to become involved.

Thursday, October 16, 1997

RESEARCH SESSIONS **3:00 p.m. - 4:20 p.m.**

Session 34 **Bull's Head** **Chair:** Jim Powell, *Ball State University*	**"Embedding Service Learning in Curriculum & Embedding Curriculum in Service Learning"**	**Symposium (Division B)**
	Toward A Theory of Service Learning	Tony Santire, *University of Nebraska-Lincoln*
	First Year Teacher Development and Service Learning	Beth Briney, University of *Nebraska-Lincoln*
	Quantitative Results	Larry Peterson, *University of Nebraska-Lincoln*
	A Teacher's Perspective: What It Was Like	Bev Routh, *University of Nebraska-Lincoln*
	Qualitative Reflections/Metaphors	Gerald Giraud, *University of Nebraska-Lincoln*
Session 35 **Fork's House** **Chair:** Kathy Sparrow, *Akron Public Schools* **Discussant:** Isadore Newman, *University of Akron*	**"Qualitative Research and Program Evaluation"**	**Paper Session (Division H)**
	Strategies to Cope With Spiraling Tuition Costs	Sharon Latkovich, *Ashland University*
	Evaluating Classroom Publishing: A Discussion of Methodological Issues	Catherine Knight, *University of Akron;* Walter J. Kuleck, *The Hennepin Group, Inc.*
	Using Alumni Satisfaction Information for Continuous Program Improvement	Craig Wells, Michael J. Subkoviak and Charlene E. Tortorice, *University of Wisconsin-Madison*
	The Evaluation of an Extended Instruction Tutoring Program	Kelly Walsh, *The Ohio State University*
Session 36 **Lake House** **Chair/Discussant:** Joan Timm, *University of Wisconsin-Oshkosh*	**"Native American Education and Interdisciplinary Collaboration"**	**Paper Session (Division G)**
	Native Culture and Learning: Implications for Teaching American Indian Students	Maureen Smith, *University of Wisconsin-Oshkosh*
	Legislated Learning and Multicultural Education: A Case Study	Maureen Smith, *University of Wisconsin-Oshkosh*
	Listening to History: A Qualitative Research Study	Linda H. Chiang, *Anderson University*
Session 37 **American House** **Chair:** Mary Ann Wham, *University of Wisconsin-Whitewater* **Discussant:** Tom Andre, *Iowa State University*	**"Children's Learning and Development in Regular and Special Education Settings"**	**Paper Session (Division C)**
	Making Conservationists and Classifiers of Preoperational Fifth Grade Students	Linda Bakken, Frances Clark, Twyla Sherman, and Johnie Thompson, *Wichita State University;* Kimberlee Dwyer, Nancy Johnson, and Higinio Peno III, *Horace Mann Elementary School*
	The Long-Term Effects of Feverstein's Instrumental Enrichment	Robert G. Harrington, *University of Kansas;* Paul Chin, *Blue Valley Public Schools*
	The Development of a Survey Instrument to Assess Parental Perceptions of Inclusionary Educational Programs for Exceptional Children	Robert G. Harrington and Elizabeth Witt, *University of Kansas*

Remember LIFE is the search for positive alternatives, and our M-WERA meeting qualifies as one of them!

1100

Thursday, October 16, 1997

M-WERA INVITED SPEAKER
Division E **3:00 p.m. - 4:20 p.m.** **Shakespeare Hotel**
Session 38

"Bridging the Gap: Multicultural Perspectives"

Gloria Smith
Michigan State University

M-WERA SOCIAL **6:00 p.m. - 8:00 p.m.** **Button's**
Session 39

Cracker Barrel Social

Hosted by: Linda Bakken, M-WERA Member-at-Large

6:00 p.m. - 8:00 p.m.
Button's (off Mad Anthony's Lounge) 15th Floor

1101

Friday, October 17, 1997

Morning Wake-Up and Coffee
7:00 a.m. - 8:00 a.m.
15th Floor Lobby

Conference Registration
8:00 a.m. - 4:00 p.m.
14th Floor, East Lobby

Session 40

M-WERA General Business Meeting
8:00 a.m. - 9:20 a.m.
Sauganash Ballroom East

ROUNDTABLE PRESENTATIONS **8:00 a.m. - 9:20 a.m.** **Sauganash Ballroom West**
Session 41

Table 1 **Division K**	One Year Later: Follow-Up On Professional Development School	Sandra J. Bland and Jeffrey B. Hecht, *IllinoisState University*
Table 2 **Division K**	Teacher's Perceptions of Knowledge and Skills Necessary for Beginning Teachers	Gregory J. Marchant and Benjamin M. Lasky, *Ball State University*
Table 3 **Division K**	Researcher's Perspectives on What Teachers Know and Should Know About Adolescent Development	Gregory J. Marchant and Sharon E. Paulson, *Ball State University*
Table 4 **Division K**	Are We Reflecting Yet?: Improving Educators' Instructional Methods Through Self-Evaluation and Reflection	Renee W. Campoy, *Murray State University*
Table 5 **Division E**	The Two Faces of Narcissism and Adolescent Mental Health	Matthew Aalsma, *Ball State University;* Nicole M. Varshney, *University of Ottawa;* Daniel Arens and Daniel Lapsey, *Ball State University*
Table 6 **Division E**	The Interaction Between Play and Children's Representational Abilities	E. Peter Johnsen, Dick Tracy, and Melinda Russell, *University of Kansas*
Table 7 **Division E**	The Power of Parents During Informal Interactions With Preschool Teachers - A Video Tape Content Analysis	Shauna Adams, *University of Dayton*
Table 8 **Division H**	Survey Response Comparison of Principals by School Level in the Implementation of Funded School Improvement Programs	Jerry Staggs and William Loadman, *The Ohio State University*

1102

Friday, October 17, 1997

ROUNDTABLE PRESENTATIONS **8:00 a.m. - 9:20 a.m.** **Sauganash Ballroom West**
Session 41

Table 9 **Division I**	Technological Use and Challenge for Special Education, Teacher Education Faculty	Merrie Beth Fisher, *Indiana University*
Table 10 **Division J**	Performance-Based Assessment and the Use of Portfolios in Postsecondary Education	Bonnie Dunwoody, *St. Mary's of Notre Dame*

EXHIBITS **9:00 a.m. - 5:00 p.m.**
Session 42

Exhibits
9:00 a.m. - 5:00 p.m.
14th Floor, West Lobby

RESEARCH SESSIONS **9:30 a.m. - 10:50 a.m.**

Session 43	**"Reflection and Teacher Education"**	**Paper Session (Division K)**
Western Stage	Who Is More Reflective?	Maria Elena Galvez-Martin, *The Ohio State University-Lima*
Chair: Judy Jackson May, *Bowling Green State University*	Teaching of Reflective Practice in a Field-Based Elementary Teacher Education Program	Bernard W. Arenz, *University of Texas-El Paso*
	Guided Preservice Teacher's Reflection	Maria Elena Galvez-Martin, *The Ohio State University-Lima;* Connie Bowman, *The Ohio State University*
Discussant: James A. Salzman, *Ursulina College*		
	Reflection and Pedagogical Knowledge Versus Pedagogical Content Knowledge	Maria Elena Galvez-Martin, *The Ohio State University-Lima*
Session 44	**"Mentoring and Teacher Education"**	**Paper Session (Division K)**
Steamboat Hotel	Lessons From A First Year Professional Development School Partnership	Carole Newman and Barbara Moss, *University of Akron*
Chair: Karen M. Dutt-Doner, *Indiana State University*	The Study of Pathwise Training on Cooperating Teachers: Mentoring Real or Imagined?	Carmen Giebelhaus, *University of Dayton;* Connie Bowman, *The Ohio State University*
Discussant: Hema Ramanathan, *Butler University*	Reshaping the Profession One Teacher At A Time: Collaborative Mentoring of Entry School Teachers	Donald M. Williams, *The Ohio State University-Lima;* Connie Bowman, *The Ohio State University*

Never worry about whether or not you have a good opportunity, just be sure to be good to every opportunity. Our M-WERA meeting is an opportunity, but it's your contributions and participation that will make it a good opportunity.

Friday, October 17, 1997

RESEARCH SESSIONS 9:30 a.m. - 10:50 a.m.

Session 45

Mansion House

Chair:
Theodore Kowalski, *Ball State University*

Discussant:
Dianne Ashby, *Illinois State University*

"State and Regional Educational Reform Efforts" — **Paper Session (Division A)**

The Impact of State Mandated Educational Reform and Accountability on Principal Leadership	Dianne Ashby, Paul J. Baker, and William Rau, *Illinois State University*
A Survey of School Improvement Efforts in South Texas Elementary and Secondary Schools	Charles D. Manges and Linda Avila, *Texas A & M University*
Project Q.U.E.S.T.: A State of Ohio Pilot Project for School Reform, Increased Learner Outcomes, and Governmental Deregulation	Steven C. Oborn and Gay Lynn Shipley, *University of Dayton;* Susan Owens, *Ripley Learning Organization*
The Effect of the Religious Right on Educational Reform: Legal Challenges to Curriculum and OBE	Elizabeth Timmerman Lugg, *Illinois State University*

Session 46

Columbian House

Chair:
Thomas Knapp, *The Ohio State University*

"Using Playing Cards in the Teaching of Statistics" — **Alternative Session (Division D)**

Schuyler W. Huck, *University of Tennessee*
Thomas R. Knapp, *The Ohio State University*
Dennis W. Leitner, *Southern Illinois University*
Joel R. Levin, *University of Wisconsin-Madison*

Session 47

Bull's Head

Chair:
Steve Benton, *Kansas State University*

Discussant:
Roberta J. Scholes, *ACT, Inc.*

"Recent Advances in Cognitive Strategy Research and Instruction" — **Paper Session (Division C)**

Mind Mapping as an Instructional Strategy for Complex Concept Development	Margaret L. Bailey, *Northern Illinois University*
A Mnemonic Matrix for Helping Students Acquire Science Facts and Relationships: Snatching Victory From the Jaws of Defeat	Robert K. Atkinson, Laura A. Atkinson, and Joel R. Levin, *University of Wisconsin-Madison*
A Comparison of Solution-Finding and Memorization Approaches to Problem Solving	Beverly J. Dretzke, *University of Wisconsin-Eau Claire;* Traci L. Jasperson, *Albert Lea Schools*
A Comparative Analysis and Evaluation of Knowledge Structures Between Expert Novice and Struggling Novice Accounting Students	Michael L. Carroll and Ronald R. Morgan, *Loyola University-Chicago*

Session 48

Fork's House

Chair:
Margaret "Peggy" Simpson, *Northwestern University*

Discussant:
Elizabeth Timmerman Lugg, *Illinois State University*

"Improving Outcomes for Teachers and Students" — **Paper Session (Division A)**

Induction Programs for First-Year Teachers: Responding to Diversified Needs	Barbara L. Brock, *Creighton University;* Marilyn L. Grady, *University of Nebraska*
Student Assessment Requirements and Expectations for Newly Inducted Teachers in Illinois	Kerry Bibbins, *Illinois State University*
Why Central Kansas Citizens Dropped Out of School and Returned To a Learning Center To Pursue a High School Diploma	Randall Turk, Melva Ownes, and Sarah Falk, *Wichita State University*
Academic Probation: A Student Perspective	Martha M. Thomas, *Miami University*
Comparison of Charismatic Leadership of Secondary School Principals in Low SES/Low Cognitive Ability Schools and in High SES/High Cognitive Ability Schools	Charles E. Kline and Leo P. Philbin, *Purdue University*

Friday, October 17, 1997

RESEARCH SESSIONS 9:30 a.m. - 10:50 a.m.

Session 49

Lake House

Chair:
Donna Waechter,
Akron Board of Education

Discussant:
Kathy Sparrow,
Akron Public Schools

"Data Analysis and Evaluation for Pre-Service Teachers"

Paper Session (Division H)

Evaluating the Impact of the FOCUS Model on the Efficacy Levels of Teachers	John W. Fraas, *Ashland University*; Gary Russell, *Center for Professional Development*; Isadore Newman, *University of Akron*
Teachers' Definition of Math: Creating and Implementing an Instrument	Lynne M. Pachnowski, *University of Akron*
4-Block Scheduling: A Case Study of Data Analysis of One High School After Two Years	Dave Snyder, *Angola High School*
The Test of Standard Written English: An Effective Tool for Identifying Written Samples to Be Evaluated	Peggy Woodard, David Suddick and Jeanne Klockow, *Governor's State University*

Session 50

Mansion House

Chair:
Tom Oldenski,
University of Dayton

Discussant
Brian Hinrichs,
Illinois State University

"Influencing Administrator Preparation: New Ideas From the Field"

Symposium (Division A)

The University of Cincinnati's Administrator Development Academy: Active Experiences in the Processes and Development of Professional Skills Needed for Future Educational Leaders	Ted A. Zigler, *Wm. Henry Harrison High School*; Steve McCafferty, *Newport Middle School*; John Hill and Robert Flinchbaugh, *University of Cincinnati*; Gary Leibold, *Glen High School*; Cindy Leibold, *Turpin H.S.*
Reforming Education: What are the Implications for Teachers?	John Daresh, *University of Texas- El Paso*; Kerry C. Bibbins, *Illinois State University*
School Leadership and Reflective Practice	Martin H. Jason, *Roosevelt University*
Research Requirements in Educational Administration Doctoral Programs: Is Reform Necessary?	Theodore J. Kowalski, *Ball State University*; A. William Place, *University of Dayton*

M-WERA INVITED SPEAKER

Division D **9:30 a.m. - 10:50 a.m.** **Sauganash West**

Session 51

"Setting Standards Using Angoff's Method: Does the Method Meet the Standard?"

James Impara
University of Nebraska

LUNCHEON KEYNOTE SPEAKER

Session 52 **11:00 a.m. - 1:20 p.m.** **Sauganash Ballroom East**

"An Update on Research Regarding Multicultural Education"

James B. Boyer
Kansas State University

James Boyer will discuss issues related to diversity in educational research activity to include research dimensions, research production, and research consumption. He will elaborate on concerns of "authentic" research and its essential functions as America's demographic picture changes so rapidly. He will also cite several areas of needed research not yet undertaken by America's educators.

Friday, October 17, 1997

RESEARCH SESSIONS 1:30 p.m. - 2:50 p.m.

Session 53

Western Stage

"Using Drama as a Tool for Reflection in the Preservice Teacher Education Curriculum" — **Interactive Session (Division K)**

Presenters:
Adrian Rodgers, Deborah Bainer, Terri Godby, Megan Grimm, and Suzanne Hayek, *The Ohio State University-Columbus*

Session 54

Steamboat Hotel

Chair:
Carol Ligon Bentley,

Discussant:
Rick A. Breault, *University of Indianapolis*

"Beginning Teachers and Teacher Education" — **Paper Session (Division K)**

Balancing Work and Family: The Entry Years of Teaching	Mary K. Bendixen-Noe, *The Ohio State University-Newark*
A Longitudinal Study of Relationships Between Candidates' Abilities, Development of Teaching Concerns, and Success in Entering Teaching	Ronald N. Marso and Fred L. Pigge, *Bowling Green State University*
The Impact of Preservice Teachers on Early Childhood Students	John Laut, *Coastal Carolina University*

Session 55

American House

Chair:
Carole Newman, *University of Akron*

Discussant:
John Fraas, *Ashland University*

"Teacher Evaluation, Formative Evaluation and Professional Development" — **Paper Session (Division H)**

Personal and School Change in One FDS	Rick A. Breault, *University of Indianapolis*
A Study of the Benefits of Collaborative Planning Time in the Elementary Schools	David W. Brown, *Southwest Missouri State University*
A Collaborative Model of Teacher Evaluation: Roles and Challenges Faced By Various Constituent Groups	Craig A. Mertler, *Bowling Green State University*; George J. Peterson, *Southwest Missouri State University*
Students as Stakeholders in Teacher Education: Teacher Perceptions of a Formative Feedback Model	Craig A. Mertler, *Bowling Green State University*

Session 56

Columbian House

Chair:
Thomas O'Neill, *American Society of Clinical Pathologists*

Discussant:
Suzy Green, Ohio University; Richard M. Smith, *Rehabilitation Foundation, Inc.*

"Standard Setting and Cut Scores" — **Paper Session (Division D)**

Effect of a Modified Angoff Strategy For Obtaining Item Performance Estimates In A Standard Setting Study	Gerald Giraud and Barbara S. Plake, *University of Nebraska*
Setting Performance Standards on Polytomously Scored Assessments: An Adjustment to the Extended Angoff Method	Melody Hertzog, Barbara S. Plake, James C. Impara, Gerald Giraud, and Robert Spies, *University of Nebraska*
Cutscore Validity In A Public School Setting	Gerald Giraud, James C. Impara, Barbara S. Plake, Melody Hertzog, and Robert Spies, *University of Nebraska*

Session 57

Fork's House

Chair/Discussant:
Elizabeth Johnson, *Eastern Michigan University*

"Historical Perspectives and Contemporary Responses" — **Paper Session (Division F)**

The Origins of Modern Civic Education in the United States	Thomas Vontz, *Indiana University*
Hometown Pride: Power Structures in the Development of the American Rural Curriculum, 1897-1920	Douglas Feldmann, *Indiana University*
Social Services, Public Schools, and the Poor: Historical Perspectives and a Contemporary Response	Patricia Williams-Boyd, *Eastern Michigan University*

Friday, October 17, 1997

RESEARCH SESSIONS 1:30 p.m. - 2:50 p.m.

Session 58 **Bull's Head** **Chair:** Larry McNeal, *Illinois State University* **Discussant:** A. William Place, *University of Dayton*	**"The School Community Link: Problems and Challenges"**	**Paper Session (Division A)**
	Focusing on the Big Variables	David C. Kingsley, *Wedgewood Associates and Western Michigan University*; Barbara J. Davis, *Olivet College*
	The Contextual World of Children and the School-Community: James Coleman and the Effective Schools Movement	Larry McNeal, *Illinois State University*
	Critical Leadership for Urban Catholic Schools	Julie K. Biddle, *University of Dayton*
	Slogging Through the Muck: Public Education, Democracy, and Participation	Nicole K. Roberts, *University of Illinois*
Session 59 **Lake House** **Chair/Discussant:** Laurie O'Reilly, *Ball State University*	**"Equity, Human Rights and Voice in the Curriculum"**	**Paper Session (Division B)**
	The Politics of Democracy: The Place of Human Rights in the Curriculum	Juan Judikis, *Ball State University*
	A Study of Equity in the Curriculum in Wisconsin, Massachusetts, and Texas	Kaetlyn Lad and James Walter, *Texas A&M University*; Jay Thompson, *Ball State University*
	Who Controls the Vision: Restructuring Student Teaching to Meet Performance-Based Assessments	Jim Powell, *Ball State University*
Session 60 **American House** **Chair/Discussant:** Maureen Smith, *University of Wisconsin-Oshkosh*	**"Hmong Identity and Hmong Education"**	**Paper Session (Division G)**
	Identity Development in Hmong College Women: The Educational Environment as "Transitional *Space*"	Jennifer A. Pendya, *Northwestern Memorial Hospital*
	Ideologies of Literacy: The Historical Development of the Reading and Writing in Laos: 1921-1975	John M. Duffy, *University of Wisconsin-Madison*
	The Relationship Between Culture and Cognitive Style: Implications for Teaching in a Diverse Society	Joan Timm, *University of Wisconsin-Oshkosh*

M-WERA INVITED SPEAKER

Division A **1:30 p.m. - 2:50 p.m.** **Shakespeare Hotel**

Session 61

"Communication Skills in the Context of School Reform"

Theodore J. Kowalski
Ball State University

1997 M-WERA Conference Invited Speakers

M-WERA Invited Speakers

Robert J. Shoop
Kansas State University
Kick-Off Session, Wednesday, October 15, 1997
"The Legal Context of Sexual Harassment in Education"
Sauganash Ballroom East
8:00 p.m. - 10:00 p.m.

Follow-Up Session, Thursday, October 16, 1997
"Sexual Harassment and Violence in America's Schools"
with Jack Levin
Sauganash East
11:00 a.m. - 12:20 p.m.

Jack Levin
Northeastern University, Boston
Keynote Session, Thursday, October 16, 1997
"Youth Violence Goes to School"
Sauganash Ballroom East
10:00 a.m. - 10:50 a.m.

Follow-Up Session, Thursday, October 16, 1997
"Sexual Harassment and Violence in America's Schools"
with Robert J. Shoop
Sauganash East
11:00 a.m. - 12:20 p.m.

James B. Boyer
Kansas State University
Luncheon Keynote Session
Friday, October 17, 1997
"An Update on Research Regarding Multicultural Education"
Sauganash Ballroom East
11:00 a.m. - 1:20 p.m.

Follow-Up Session, Friday, October 17, 1997
"A Question and Answer Dialogue Regarding Multicultural Issues"
Lake House
4:30 p.m. - 5:20 p.m.

M-WERA Divisional Invited Speakers

Paul Baker
Illinois State University
Division A Invited Speaker,
Thursday, October 16, 1997
"The Leadership Challenge: Being in the Middle in the Middle of the School Reform Era"
Shakespeare Hotel
1:30 p.m. - 2:50 p.m.

Gloria Smith
Michigan State University
Division E Invited Speaker,
Thursday, October 16, 1997
"Bridging the Gap: Multicultural Perspectives"
Shakespeare Hotel
3:00 p.m. - 4:20 p.m.

James Impara
University of Nebraska
Division D Invited Speaker,
Friday, October 17, 1997
"Setting Standards Using Angoff's Method: Does the Method Meet the Standard?"
Merchant's Hotel
9:30 a.m. - 10:50 a.m.

Theodore J. Kowalski
Ball State University
Division A Invited Speaker,
Friday, October 17, 1997
"Communication Skills in the Context of School Reform"
Shakespeare Hotel
1:30 p.m. - 2:50 p.m.

Molly Baker
Western Illinois University
Division J Invited Speaker,
Friday, October 17, 1997
"An Examination of Technology Currently in Use in Higher Education"
Shakespeare Hotel
3:00 p.m. - 4:20 p.m.

Special Forum
'Effects of Policies on the Motivation of Teachers and Students: Dialogue Between Researchers, State Assessment Officers, and School Policy Makers"
Western Stage House
3:00 - 4:20 p.m.

Martin Maehr, University of Michigan
Carole Perlman, Chicago Public Schools
Jo Anderson, Illinois Education Association
Nick Wahl, Western Avenue School
Mervin M. Brennan, Illinois State Board of Education
Glen W. (Max) McGee, Deerfield Public Schools
Lawrence Krengel, Northern Illinois University

1108

Hotel Room Reservation Form

Mail this form to the hotel - to be received by September 15, 1997.

Organization: Mid-Western Educational Researcher Association (M-WERA)

To make your hotel room reservation, please complete and send this form to:

Reservations Manager
Holiday Inn-Mart Plaza
300 North Orleans Street
Chicago, IL 60654
or call:
(312) 836-5000

Specially reduced room rates are available to conference participants. To ensure a room at the special rate, **reservations must be received by the hotel by September 15, 1997**. After that date, reservations will be made at the prevailing rate on a space available basis.

Name: _____ Phone: _____

Company/Alliance: _____

Address: _____

City/State/Zip: _____

Sharing Room With: _____

Method of Payment: ❑ Check (attached)

❑ Credit Card (No. _____)

Signature: _____

Expiration Date: _____

Arrival Date: _____ Arrival Time: _____ Departure Date: _____

Reservations will be held until 6:00 p.m. unless guaranteed*

Check Type of Accomodation Requested:

❑ **Single** Occupancy (1 double bed) **$101****
❑ **Double** Occupancy (1 double bed) **$101****
❑ No Smoking Room, if available
❑ **Triple** Occupancy (2 double beds) **$111****
❑ **Quad** Occupancy (2 double beds) **$121****
❑ Special Accomodations Needed? ❑ Yes ❑ No
If Yes, please specify: _____

*To guarantee your reservation, please call Holiday Inn reservations at the number above or complete this form and mail it with a check for one night's cost payable to the Holiday Inn-Mart Plaza Hotel, or provide your credit card (AMEX, VISA, or MasterCard) information in the above space. Make sure you get a guarantee confirmation number.

For guaranteed reservations only, I understand that I am responsible for one night's room and tax charges which will be deducted from my deposit or charged to my credit card if I fail to cancel my reservation.

Signature: _____

**Does not include state and local taxes.

NOTE: Hotel parking is $12 per day if registered at the hotel, plus state and local taxes (no valet).

1109

M-WERA Meeting Registration Form

1997 M-WERA Annual Meeting, Chicago, IL - October 15-18, 1997

Please complete **EACH** section of the form below. All attendees, including program presenters, must register and pay applicable fees. Please clearly print or type your name as you wish it to appear on your meeting badge. Nonmembers wishing to apply for membership may register at the member's rate if membership application (below) and fee are enclosed with conference registration. (Note: One individual registration per form; duplicate as necessary.)

Name: _____

Affiliation: _____

Address: _____

City/State/Zip: _____

Phone: Business (___) _____ Home (____)_____ FAX (___)_____

Highest Degree: _____ Institution Awarding Degree: _____

Area of Specialization: _____ M-WERA Division Preference:_____

e-mail Address: _____

Is this your first M-WERA Conference? ❑ Yes ❑ No

Are you planning on staying at the Holiday Inn-Mart Plaza? ❑ Yes ❑ No If Yes, Arrival date: _____

MEETING REGISTRATION	**Postmarked by Sept. 15**	**After Sept. 15**
M-WERA Member	$45.00	$55.00
Nonmember	$50.00	$60.00
Student Member (attach letter from advisor or copy of student ID)	$30.00	$35.00
Attending Luncheon Only	$25.00	$30.00 (if available)

TOTAL Registration Fee Enclosed: _____

The Friday Luncheon is included and guaranteed in the Registration Fee if you pre-pay the full registration by Sept. 15. It is not guaranteed to those who register late or on-site

Will you be attending the Luncheon? ❑ Yes ❑ No **Will a vegetarian meal be required?** ❑ Yes ❑ No

PRE-CONFERENCE WORKSHOPS (not included in conference registration fee) See program for workshop descriptions.

❑ General Linear Model ($10) ❑ Computer Integrated Math Problems ($5) ❑ It's All Geek to Me: Internet (N/C)

❑ Rasch Measurement ($25) ❑ Arts-Based Curriculum (N/C) ❑ Awareness/Student Strengths (N/C)

TOTAL Workshop Fee Enclosed: _____

M-WERA MEMBERSHIP DUES

1997 Membership Dues *(required for Presenters)*	**Regular** - $18.00	**Student** - $10.00
1998 Membership Dues	**Regular** - $18.00	**Student** - $10.00
Lifetime Membership Dues	$180.00	

TOTAL Membership Dues Enclosed: _____

M-WERA MATERIALS (*Materials MUST be picked up at the conference* - Please indicate quantity desired.)

____ **M-WERA Membership Directory**	$7.00 each
____ **M-WERA '97 Annual Meeting Abstracts**	$4.00 paper/$3.00 IBM
____ **M-WERA Lapel Pin**	$3.00 each

TOTAL Materials Fee Enclosed: _____

When registering and/or joining, please make check(s) payable to **M-WERA**, and mail completed form(s) to: **Dr. Jean Pierce, Northern Illinois University, Department EPCSE, DeKalb, Illinois 60115.**

TOTAL FEES ENCLOSED: _____

PRESENTERS: M-WERA will be providing overhead projectors. You may bring other AV equipment with you, or rent it from the hotel. Please see page 3 for more details.

Notes from the M-WERA President's Desk

I would like to extend a special invitation
to everyone to attend the
M-WERA President's Reception
on Friday, October 17, 1997
in the Wolf Point Ballroom on the 15th Floor of the Holiday Inn-Mart Plaza
from 9:00 p.m. to midnight
and to attend the
M-WERA Presidential Address
entitled
"Learning About Sex: The Missing Paradigms and Challenges to Educational Research"
on Saturday, October 18, 1997
in the Marquette Room on the 16th Floor of the Holiday Inn-Mart Plaza
from 9:30 to 10:50 a.m.

Dr. Sharon McNeely

Friday, October 17, 1997

RESEARCH SESSIONS 3:00 p.m. - 4:20 p.m.

Session 62 — **"Professional Development and Teacher Education"** — **Paper Session (Division K)**

Lake House

Chair:
Dennis Kirchen, *Dominican University*

Discussant:
Susan Cramer, *University of Wisconsin-Oshkosh*

Teachers and the Leadership/Followership Dialectic	Craig A. Mertler, *Bowling Green State University;* George J. Petersen, *Southwest Missouri State University;* Sheri Steyer, *Shumaker Elementary School*
Teacher Choices About Their Own Professional Development	Deborah L. Bainer, *The Ohio State University-Mansfield;* Dinah Wright, *Dublin City Schools*
Developmental Stages of Teaching: Moving From Establishing Structures to the Art of Teaching	Charles Kent Runyan, Rozanne Sparks, David Hurford, and Richard Lipka, *Pittsburg State University*

Session 63 — **"Towards New Directions In Self-Regulated Learning Research"** — **Symposium (Division C)**

Steamboat Hotel

Chair:
Nelson Dubois, *SUNY- Oneonta*

Kirsten Connelly and Nelson Dubois, *SUNY- Oneonta*
Ken Kiewra, *University of Nebraska*
Thomas S. Parish, *Kansas State University*
Marlene Schommer, *Wichita State University*

Session 64 — **"Teachers and Classrooms"** — **Paper Session (Division B)**

Bull's Head

Chair:
Nancy Saunders, *Ball State University*

Discussant:
Jay Thompson, *Ball State University*

Teacher Perceptions of Disruptive Behavior: Utilizing Behavior Management Strategies to Maintain Instructional Focus	Bobby Malone, Deborah Bonitz and Matt Rickett, *Ball State University*
The Experts and the Teachers: A Description of Exemplary Use of Technology in Elementary Classrooms	Susan Berg, Carolyn Benz, Tom Lasley, and Daniel Raisch, *University of Dayton*
Professional Growth Among Teachers Involved In A Professional Development School Summer Institute	Allison Hoewisch, *University of Missouri-St. Louis*

Session 65 — **"Factor Analysis and Related Studies Education"** — **Paper Session (Division D)**

Columbian House

Chair:
Jay Price, *University of Wisconsin- Stevens Point*

Discussant:
Janet Sheehan, *Northern Illinois University;*
T. Mark Beasley, *St. John's University*

The Factor Structure Stability of "Thoughts on Thinking"	Marci L. Nichols, *Miami University*
An Application of Confirmatory Factor Analysis Validation of An Instrument to Follow-Up Preservice Teacher Education Graduates	Mohammed A. Rahman and William E. Loadman, *The Ohio State University*
Correspondence Analysis (CA) and Its Application in Educational Research	Yanghua Wang, *University of Kansas*
Introduction to Recent Microcomputer Versions of SPSS and SAS With Special Attention to Multivariate Statistical Techniques	Kenneth H. Strand and Ong-Art Naiyaptana, *Illinois State University*
MANOVA, Canonical and Discriminant Analyses: Selected Issues	Kenneth H. Strand and Robert J. Ciszek, *Illinois State University*

Friday, October 17, 1997

RESEARCH SESSIONS 3:00 p.m. - 4:20 p.m.

Session 66 — **"Reliability and Related Studies"** — **Paper Session (Division D)**

Fork's House
Chair:
Maria Elena Galvez-Martin, *The Ohio State University-Lima*
Discussant:
Debra Spearing, *The Ohio State University;* Michael Subkoviak, *University of Wisconsin-Madison*

Test Score Change Patterns for Schools	Md Hafidz Omar and Mark R. Pomplun, *University of Kansas*
Expectancy Effects, Attrition, Treatment Fidelity in Longitudinal Designs	Linda D. Lange and Cheryl Utley, *University of Kansas*
Combining IRT, Generalizability, and Cognitive Methods in the Analysis of Standardized Mathematics Achievement Tests	Dimiter M. Dimitrov and Michael P. Gallagher, *Kent State University*

Session 67 — **"Multiple Lenses Focusing On School Improvement: Three Case Studies"** — **Panel Session (Division H)**

American House
Chair/Discussant:
MaLu Dantas, *The Ohio State University*

Adrian Rodgers, Emily Rodgers, Colleen Griffiths, and MaLu Dantas, *The Ohio State University-Columbus*

Session 68 — **"The ABC's of Self-Esteem"** — **Interactive Session (Division D)**

Mansion House

Presenters:
James R. Necessary, *Ball State University;* James J. McCluskey, *Central Michigan University*

M-WERA SPECIAL FORUM 3:00 p.m. - 4:20 p.m.

Session 69

Western Stage

"Effects of Policies on the Motivation of Teachers and Students: Dialogue Between Researchers, State Assessment Officers, and School Policy Makers"

Chairs:
Sarah Peterson and Jean Pierce, *Northern Illinois University*

Discussant:
Susan Brookhart, *Duquesne University*

Invited Participants:
Martin Maehr, *University of Michigan*
Mervin M. Brennan, *Illinois State Board of Education*
Carole Perlman, *Chicago Public Schools*
Glen W. (Max) McGee, *Deerfield Public Schools*
Jo Anderson, *Illinois Education Association*
Lawrence Krengel, *Northern Illinois University*
Nick Wahl, *Western Avenue School*

M-WERA INVITED SPEAKER

Division J 3:00 p.m. - 4:20 p.m. **Shakespeare Hotel**

Session 70

"An Examination of Technology Currently in Use in Higher Education"

Molly Baker
Western Illinois University

SYMPOSIUM SESSION 4:30 p.m. - 5:20 p.m. Division H

Session 71 — **"Evaluation Models and Their Applications"**

Columbian House

Joseph Marth, *Nationwide Training Center;* Carole Newman and Isadore Newman, *University of Akron;* Kathy Sparrow, *Akron Public Schools*

Friday, October 17, 1997

M-WERA SPECIAL FORUM **4:30 p.m. - 5:20 p.m.**

Session 72

Western Stage	**"An Open Forum: Forming Collaborative Partnerships Among Teachers and Researchers"**
Chair: Jean Pierce, *Northern Illinois University*	***Invited Participants:*** Mary Bencini, *Western Avenue School* Lori Davis, *National Louis University*

RESEARCH SESSION **4:30 p.m. - 5:20 p.m.**

Session 73	**"Qualitative Research In Education"**	**Paper Session (Division C)**
Bull's Head	A Qualitative Study Evaluating Active Learning in Computer Science	Carol L. Spradling, Gary McDonald and Merry McDonald, *Northwest Missouri State University*
Chair: M Cecil Smith, *Northern Illinois University*	Motivation and Gifted Students: A Qualitative Investigation	Pamela R. Clinkenbeard, *University of Wisconsin-Whitewater*
Discussant: Jacqueline Rickman, *Western Illinois University*	Classroom Assessment: The Relationship Between Instruction and Practice	Cynthia S. Campbell and John A. Evans, *Southern Illinois University*

Session 74	**"Applying Modern Motivational Techniques and Philosophies and New Self- Esteem Principles to Challenge Secondary and Post-Secondary Students"**	**Interactive Session (Division D)**
Mansion House		
Chair: James J. McCluskey, *Central Michigan University*	**Panelists:** James J. McCluskey, *Central Michigan University* Thomas S. Parish, *Kansas State University* James R. Necessary, *Ball State University*	

Follow-Up Session- Invited Speaker **4:30 p.m. - 5:20 p.m.** **Lake House**

Session 75

"A Question and Answer Dialogue Regarding Multicultural Issues"

James B. Boyer
Kansas State University

James Boyer will entertain questions regarding the dimensions of educational research and will discuss why many culturally-different populations do not trust the educational research community. He will also make proposals for developing research activity which embraces a multiethnic population and discuss why these concerns are essential for these times.

PRESIDENT'S RECEPTION **9:00 p.m. - 12 midnight** **Wolf Point Ballroom**

Session 76

Dr. Sharon McNeely cordially invites you to attend the President's Reception

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Wolf Point Ballroom - 15th Floor
9:00 p.m. - midnight

Saturday, October 18, 1997

Morning Wake-Up and Coffee
7:00 a.m. - 8:00 a.m.
15th Floor Lobby

Session 77

M-WERA Conference Program Committee Feedback and Planning Session
7:30 a.m. - 9:20 a.m.
Thomas S. Parish, Program Chair
Western Stage

RESEARCH SESSIONS 8:00 a.m. - 9:20 a.m.

Session 78
Lake House
Chair:
Brian Hinrichs,
Illinois State University
Discussant:
Donald Hackmann,
Illinois State University

"Promoting Effective Leadership in Institutions of Higher Education" — **Paper Session (Division A)**

- Leadership Behaviors of Allied Health Division Chairs in Two-Year Community Colleges — Cynthia A. Beckett, *Sinclair Community College*
- The Leadership Role of the Tribal College President — Bernita L. Krumm, *University of Nebraska*
- Enhancing Administration Through Mission and Goal Development — Brian R. Hinrichs, *Illinois State University*
- Birth Order and Leadership — Bernita L. Krumm and Marilyn L. Grady, *University of Nebraska*

Session 79
Steamboat Hotel
Chair:
Mary Bendixen-Noe,
The Ohio State University-Newark

"Us Versus Them: Reclaiming A Role For Teacher Educators" — **Forum Session (Division K)**

Invited Participants:
Rick A. Breault and Stacy McMullen, *University of Indianapolis*

Session 80
American House
Chair:
Mary B. Campbell,
St. Xavier University
Discussant:
Douglas A. Feldmann,
Indiana University

"Assessment, Multiple Intelligences and Teacher Education" — **Paper Session (Division K)**

- Using Portfolio Assessments in Graduate Level Courses for Teachers — Ervin F. Sparapani, *Saginaw Valley State University*
- Levels of Use: Multiple Intelligences — Susan Cramer, *University of Wisconsin-Oshkosh*

Session 81
Mansion House
Chair:
Clara New, *University of Wisconsin-Parkside*
Discussant:
Kathleen Kearns,
Illinois State University

"Inclusion and Multicultural Perspectives in the Classroom" — **Paper Session (Divisions E & G)**

- Inclusion and the Perceptions of Labeled Students — Frank Fitch, *Miami University*
- Questions In the Classroom — Ruth R. Becker, *University of Wisconsin-Parkside*
- The Special Education Competencies of General Education Administrators — Stanley E. Wigle, *University of Tennessee-Martin*; Daryl Wilcox, *Wayne State University*
- Gender Bias in Children's Books — Mary Frances Sanchez, *Ball State University*

Saturday, October 18, 1997

RESEARCH SESSIONS 8:00 a.m. - 9:20 a.m.

Session 82 — **"Technological Applications"** — **Paper Session (Division D)**

Columbian House
Chair:
Richard Hofmann, *Miami University*
Discussants:
Terri Strand, *Strand Consulting Services;*
Abbott Packard, *University of Northern Iowa*

Using a PDA for Field Data Collection	Jeffrey B. Hecht, *Illinois State University*
A Quantitative Examination of World Wide Web Site Navigational Efficiency	Perry L. Schoon, *Illinois State University*
The Internet and Student Use	Greg Geise, *Ball State University*

Session 83 — **"Using the Socratic Seminar to Develop Critical Thinking"** — **Symposium (Division C)**

Bull's Head

Invited Participants:
Marcia E. Sheridan and Dennis W. Rudy, *Indiana University-South Bend*

Session 84 — **"Gender and Leadership Issues in Education** — **Paper Session (Division A)**

Fork's House
Chair:
Elizabeth Timmerman-Lugg,
Illinois State University
Discussant:
Tom Oldenski,
University of Dayton

Women Assistant Superintendents in Northeast Ohio: A Qualitative Study of the Person, the Position, the Power	Norma L. Connor, *Cleveland Heights/ University Heights Schools*
Transformational Leadership and the Superintendency	Pam A. Floit, Dianne Ashby, and Patricia Klass, *Illinois State University*

Session 85 — **"Assisting Teachers In Understanding How To Use Data To Plan"** — **Alternative Session (Division I)**

Western Stage

Presenter:
Pamela A. Kahlich, *KJ Learning Partners, Inc.*

SYMPOSIUM SESSION 8:00 a.m. - 9:20 a.m. Division H

Session 86 — **"Quality Work: Measuring Student Engagement, Persistence and Satisfaction in Performance-Based Assessment"**

Merchant's Hotel

Chair/Discussant:
William Loadman,
The Ohio State University

William Loadman, Julie Fox, Daniel Hoffman, Anne Marie Thomas, and Barbara Wharton, *The Ohio State University*

M-WERA PRESIDENTIAL ADDRESS 9:30 a.m. - 10:50 a.m. Marquette Room (16th Floor)

Session 87

"Learning About Sex: The Missing Paradigms and Challenges to Educational Research"

Sharon McNeely
Northeastern Illinois University

1116

Saturday, October 18, 1997

RESEARCH SESSIONS 11:00 a.m. - 12:20 p.m.

Session 88 — **"Higher Education: Philosophical Approaches to Education"** — **Paper Session (Division J)**

American House

Chair:
Thomas Cody,
Western Illinois University

Discussant:
Margaret "Peggy" Simpson,
Northwestern University

Neo-Pragmatism and the Purposes of Life: A Reconsideration of the Implications of Evaluating Others	Marshall Parks, *Western Illinois University*
Learner-Centered Practices in Higher Education: Validation of Evaluation Tools	Jean Pierce and Brunnehilde Rapoo, *Northern Illinois University;* B. McCombs and P. Lauer, *Mid-Continental Regional Educational Laboratory*
Interpreting Scores on the Student Evaluation of Instruction: Identifying Influences Other Than Teaching Performance	B. Wharton, and W. Loadman, *The Ohio State University*
Assessment Skills of Community College Faculty	J. Perney and Ruth Ravid, *National Louis University*

Session 89 — **"Enhancing Learning In Training and Adult Education"** — **Alternative Session (Division I)**

Steamboat Hotel

Presenter:
Ronald Morgan, *Loyola University-Chicago*

Session 90 — **"Governance Issues In Public Education"** — **Paper Session (Division A)**

Mansion House

Chair:
Donald Hackmann,
Illinois State University

Discussant:
Theodore J. Kowalski,
Ball State University

Formal Evaluation of Indiana School Superintendents: Practices and Superintendent Perceptions	Theodore J. Kowalski, *Ball State University;* Peggy Koryl, *Fort Wayne, Indiana Public Schools*
A National Study of School Boards	Bernita L. Krumm and Marilyn L. Grady, *University of Nebraska*
The Opportunities and Risks of Privatization: A Study of Ohio Schools	William R. Hughes, *Ashland University*

Session 91 — **"Block Scheduling"** — **Paper Session (Division A)**

Columbian House

Chair/Discussant:
Larry McNeal,
Illinois State University

Teacher Perceptions Regarding Block Scheduling: A Case Study of Reactions to Change	Edward L. Corley, *Miami University*
An Examination of the Effectiveness of Block Scheduling in a Small Secondary School	Donald G. Hackmann, *Illinois State University*

Session 92 — **"How Fuzzy Was He? An Introduction to Fuzzy Logic For the Social Sciences"** — **Alternative Session (Division D)**

Bull's Head

Presenter:
Jeffrey Hecht, *Illinois State University*

Session 93 — **"Optimizing Test Development and Interpretation"** — **Alternative Session (Division D)**

Fork's House
Chair:
Ayres G. D'Costa,
The Ohio State University
Discussant:
John G. Kennedy,
The Ohio State University

Presenters:
Ayres D'Costa, Sunanta Viragoontavan, Wen-da Cheng, and Gwo-Jen (Gerald) Guo,
The Ohio State University

Saturday, October 18, 1997

RESEARCH SESSIONS 11:00 a.m. - 12:20 p.m.

Session 94	**"Curriculum and Learning"**	**Paper Session (Division B)**
Lake House	Metacognitive Tools In Art and Science	Mike Nelson and William Chandler, *University of Wisconsin-Whitewater*
Chair: Juan Judikis, *Ball State University*	Correlates of Self-Concept in Collaborative Learning	William Gnagey, Richard Sarles, and Tracy Sarver, *Illinois State University*
Discussant: Cindy Bowman, *Ball State University*	Student Attitudes Toward An Interactive Web Site Supplementing A Multimedia Distance Learning Experience	Nancy Saunders, *Ball State University*
	A Constructivist Interpretation of Attitude Towards Science	Edward L. Corley, *Miami University*

SYMPOSIUM SESSION 11:00 a.m. - 12:20 p.m. Division H

Session 95 **"Putting the Rigor in Action Research: Creating an Infrastructure"**

Merchant's Hotel

James Salzman, *Ursuline College*
Carolyn Bruce and Diane Weiland, *Rowland Elementary School*
James Hardy and Isadore Newman, *University of Akron*
Michael Loovis, Lauren Thibodeau, Jane Zaharias and Deborah Zawislan, *Cleveland State University*
Donna Snodgrass, *South Euclid-Lyndhurst Board of Education*

1113

SUBJECT/SESSION INDEX

SUBJECT	SESSION(S)
Achievement	22
Action Research	21, 95
Administrator Preparation	50
Adolescent Development	41(3), 41(5)
Alcohol Abuse Issues	14
Alternative Education	28
Angoff Method	51
Assessment and/or Evaluation	25, 37, 47, 88
Attitude Toward Education	94
Beginning Teachers	41(2), 54
Behavior	33
Block Scheduling	91
Caring	19
Children	24, 41(6)
Classroom Assessment	73
Cognitive Development	37
Cognitive Flexibility	16
Cognitive Style	36, 60
Collaboration	28, 36, 72, 79, 95
Communication Skills	61
Computer Science	73
Computers	32
Concern Theory	54
Cooperating Teachers	13
Critical Thinking	83
Curriculum	34, 59, 94
Data Analysis	49
Developmental Issues	24
Discipline	33
Distance Education	18, 27
Diversity	52, 60
Drama	53
Educational Biographies	17
Educational Climate	31
Educational Reforms	46, 49, 61, 67, 86
Educational Research	87
Equity	15, 59
Existential Beliefs	16
Factor Analysis	65
Field Experiences	13
Forces of Educational Change	31
Formative Evaluation	55
Gender Issues	81, 84
Governance Issues	90
Historical Perspectives	17, 57
Hmong	60
Human Rights	59
Inclusion	81
Induction	45
Inservice Education	45, 80
Inservice Teachers	44
Instructional Strategies	48
Internet	27, 82
Leadership Issues	29, 78, 84
Learning Strategies	63
Literacy	67
Logic	92
Management	33
Measurement	56
Memory	48
Mentoring	45
Methodology	95
Moral Education	19
Motivational Techniques	63, 69, 73, 74
Multicultural Education	19, 36, 52, 75
Multicultural Perspectives	38
Multiple Intelligences	80
Narcissism	41(5)
Native American	36
Parents	24, 41(7)
Pathwise	45
Performance-Based Assessment	41(10), 86
Policy	56
Portfolio	41(10), 80
Postsecondary Education	18, 41(10), 74
Prediction	15
Preschool Teachers	41(7)
Preservice Teacher Education	53
Preservice Teachers	12, 44, 49
Problem Solving	48
Professional Development	41(1), 55, 62, 79
Proficiency	15
Program Development	28
Program/Project Evaluation	26, 35, 41(8), 71, 86
Qualitative Research	35, 73
Reading Specialists	32
Recruitment (of future teachers)	18
Reflection	41(4), 44, 53,
Reliability	22
Representational Abilities	41(6)
Research Methodology	82, 45
Research Productivity	16
Rural Schools	12
Sampling Distributions	47
School Improvement Models	26, 29, 71
School-Community Links	58
Self-Esteem	68, 74
Self-Evaluation	41(4)
Self-Regulation	63
Service Learning	34
Setting Standards	51

SUBJECT/SESSION INDEX

SUBJECT	SESSION(S)
Sex (i.e., learning about ___)	87
Sexual Harassment	7, 20
Simulations	47
Social Sciences	92
Socratic Method	83
Special Education	37, 41(9), 81
Standard Setting	22, 56
State Funding	26
Statewide Program	26
Statistics	47, 65
Student Assessment	71, 86
Study Skills	63
Substance Abuse Issues	14
Supervision	13
Survey Data	35
Teacher Attitudes	23
Teacher Beliefs	23
Teacher Education	21, 25, 62, 79
Teacher Evaluation	55
Teacher Perception	23, 41(2)
Teacher Stages	62
Teachers	21, 49, 62, 64
Teaching Strategies	47, 48
Technological Applications	41(9), 70, 82
Test Development	93
Test Interpretation	93
Thinking	83
Urban Education	12
Violence in Schools	11, 20
Work & Family	54
World Wide Web	82
Writing	32

11:20

PARTICIPANT INDEX

PARTICIPANT	PAGE(S)
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PARTICIPANT INDEX

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1122

PARTICIPANT INDEX

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PARTICIPANT INDEX

PARTICIPANT	PAGE(S)
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PARTICIPANT INDEX

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Leibold, Gary, Glen Este High School.	20
Leibold, Cindy, Turpin High School.	20
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1125

PARTICIPANT INDEX

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Ohtsuka, Keis, Victoria University, Melbourne, AUSTRALIA.	10

PARTICIPANT INDEX

PARTICIPANT	PAGE(S)
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Peno III, Higinio, Horace Mann Elementary School, Wichita, KS.	15
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Peterson, Larry, University of Nebraska, Lincoln, NE.	15
Peterson, Sarah, Northern Illinois University, DeKalb, IL 60115-2854.	2, 28
Philbin, Leo P., Purdue University, West Lafayette, IN 47907.	19
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Rickman, Jacqueline, Western Illinois Univ., Horragin Hall 80B, 1 University Circle, Macomb, IL 61455.	2, 3, 8, 10, 29
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Robinson, Daniel, Mississippi State University.	3
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PARTICIPANT INDEX

PARTICIPANT	PAGE(S)
Rodgers, Emily, The Ohio State University, Columbus, OH 43210.	28
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Roseberry, Lea, Loyola University-Chicago, 1041 Ridge Rd., Wilmette, IL 60091.	12
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Runyan, Charles Kent, Pittsburg State University, Pittsburg, KS 66762.	3, 14, 27
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Sheridan, Marcia, Div. of Educ., Indiana University, South Bend, IN 46634.	31
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Sitlington, Patricia, University of Northern Iowa, Cedar Falls, IA 50614.	13
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Smith, Maureen E., University of Wisconsin, Educ. Found., 800 Algoma Blvd., Oshkosh, WI 54901.	15, 22
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Sparks, Rozanne, Pittsburg State University, Pittsburg, KS 66762.	27
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Speaker, Kathryne, Center for Teaching Excellence, Yardley, PA.	9
Spearing, Debbie, 4577 Crystal Ball Dr., Hilliard, OH 43026.	28

PARTICIPANT INDEX

PARTICIPANT	PAGE(S)
Spies, Robert, University of Nebraska, Lincoln, NE 68588-0348.	11, 21
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Suddick, David, Governor's State University, University Park, IL 60466.	13, 20
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Timmerman-Lugg, Elizabeth, Illinois State University, Normal, IL 61761-9958.	3, 19, 31
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Tortorice, C. E., University of Wisconsin, Madison, WI 53706-1796.	15
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von Minden, Avril, Western Illinois University, Macomb, IL 61455.	3, 10
Vontz, Tom, Indiana University, School of Education, Bloomington, IN 47405.	21
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PARTICIPANT INDEX

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1130

Thursday, October 16, 1997 • M-WERA Conference At-A-Glance

Time Period	15th Floor	Western Stage	Steamboat Hotel	Mansion House	Columbian House	Bull's Head	Fork's House	Lake House	American House	Sauganash East	Sauganash West	Merchant Hotel	Shakesp. Hotel
7:00 - 8:00 a.m.	Wake-Up & Coffee-Lobby		Session 8 New Member Welcome										
7:30 - 8:50 a.m.		Session 9 Assoc. Council Mtg.											
9:00 - 9:50 a.m.			Division K Mtg.	Division H Mtg.	Division A Mtg.	Division D Mtg.	Division B Mtg.	Division G Mtg.	Division C Mtg.	Divisions E, F, I, J Mtgs.			
10:00 - 10:50 a.m.										Session 11 Keynote Speaker			
11:00 a.m.- 12:20 p.m.		Session 12 Div. K: Places Teachers Work	Session 13 Div. K: Field Experience & Teacher Education	Session 14 Div. E: Alcohol/ Substance Abuse Issues	Session 15 Div. D: Prediction & Equity Studies	Session 16 Div. C: Instr. & Pub. in Learning Research	Session 17 Div. F: Educatnl Biography	Session 18 Div. J: Innovative Service Delivery Systems	Session 19 Div. G: Issues of Caring	Session 20 Follow-Up: Sexual Harass-ment & Violence			
1:30 - 2:50 p.m.		Session 21 Div. K: Teacher Education	Session 23 Div. K: Percept., Attitudes & Teacher Education	Session 22 Div. D: Judgemts. & Consis-tency	Session 24 Div. A & E: Develop. Issues/ Parents & Children	Session 25 Div. I: Education in the Pro-fessions	Session 26 Div. H: State Funding: Ohio	Session 27 Div. B: Utilizing Internet Tech. in Distance Education	Session 28 Div. H: Alternative Education & Collabor-ation				Session 29 Invited Speaker Div. A: Leader-ship Challenge: School Reform
3:00 - 4:20 p.m.		Session 31 Div. A: Changing Environ. of School	Session 33 Div. K: Discipline & Teacher Education	Session 30 Meet the M-WERA Editors	Session 32 Div. K: Content & Teacher Education	Session 34 Div. B: Service Learning & Curric.	Session 35 Div. H: Qualitative Research & Progr. Evaluation	Session 36 Div. G: Native American Education	Session 37 Div. C: Chidren's Learning & Dev. in Regular & Special Ed. Settings				Session 38 Invited Speaker Div. E: Bridging Gap: Multi-cultural Perspec.
6:00 - 8:00 p.m.	Session 39 Cracker Barrel Social-Button's												

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Friday, October 17, 1997 • M-WERA Conference At-A-Glance

Time Period		Western Stage	Steamboat Hotel	Mansion House	Columbian House	Bull's Head	Fork's House	Lake House	American House	Sauganash East	Sauganash West	Merchant Hotel	Shakesp. Hotel
7:00 - 8:00 a.m.	Wake-Up & Coffee- 15th Floor Lobby												
8:00 - 9:20 a.m.										Session 40 M-WERA Business Mtg.	Session 41 Round Tables		
9:00 a.m. - 5:00 p.m.	Session 42 Exhibits 14th Floor Lobby												
9:30 - 10:50 a.m.		Session 43 Div. K: Reflection & Teacher Education	Session 44 Div. K: Mentoring & Teacher Education	Session 45 Div. A: State/ Region Education Reform	Session 46 Div. D: Using Playing Cards to Teach Statistics	Session 47 Div. C: Cognitive Strategy Research & Instr.	Session 48 Div. A: Improving Outcomes for Teachers/ Students	Session 49 Div. H: Data Analysis & Eval. for Pre-Serv. Teachers	Session 50 Div. A: Admin. Prep.: New Ideas From the Field		Session 51 Invited Speaker Div. D: Angoff's Method: Standards		
11:00 a.m. - 1:20 p.m.										Session 52 Luncheon Keynote: Multi-cultural Education Research			
1:30 - 2:50 p.m.		Session 53 Div. K: Drama As Tool for Reflection in Pre-service Teacher Education	Session 54 Div. K: Beginning Teachers & Teacher education	Session 55 Div. H: Teacher Eval., Formative Eval. & Prof. Dev.	Session 56 Div. D: Standard Setting & Cut Scores	Session 58 Div. A: School Community Link: Problems/ Challenges	Session 57 Div. F: Historical Perspec-tives & Contemp. Responses	Session 59 Div. B: Equity, Human Rights & Voice in the Curric.	Session 60 Div. G: Hmong Identity & Education				Session 61 Invited Speaker Div. A: Communic. Skills in Context of School Reform
3:00 - 4:20 p.m.		Session 69 Special Forum: Effects of Motivation Policies	Session 63 Div. C: Self-Regulated Learning Research	Session 68 Div. D: ABC's of Self-Esteem	Session 65 Div. D: Factor Analysis & Related Studies	Session 64 Div. B: Teachers & Class-rooms	Session 66 Div. D: Reliability & Related Studies	Session 62 Div. K: Prof. Develop. & Teacher Education	Session 67 Div. H: School-Improve-ment: 3 Case Studies				Session 70 Invited Speaker Div. J: Technology in Higher Education
4:30 - 5:20 p.m.		Session 72 Special Forum: Forming Collab. Partner-ships		Session 74 Div. D: Applying Motivation Techniques, Philosophy & Self-Esteem Principles	Session 71 Div. H: Evaluation Models	Session 73 Div. C: Qualitative Research in Education		Session 75 Follow-Up: Questions/ Answers: Multi-cultural Issues					
9:00 p.m. - midnight	Session 76 M-WERA President Reception Wolf Point Ballroom 15th Floor												

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Saturday, October 18, 1997 • M-WERA Conference At-A-Glance

Time Period		Western Stage	Steamboat Hotel	Mansion House	Columbian House	Bull's Head	Fork's House	Lake House	American House	Sauganash East	Sauganash West	Merchant Hotel	Shakesp. Hotel
7:00 - 8:00 a.m.	Wake-Up & Coffee- 15th Floor Lobby												
7:30 - 9:20 a.m.		Session 77 Conf. Program Committee											
8:00 - 9:20 a.m.		Session 85 Div. I: Assisting Teachers in Using Data to Plan	Session 79 Div. K: Us vs. Them: Reclaiming a Role for Teacher Educators	Session 81 Div. E & G: Inclusion & Multi-cultural Perpective in the Classroom	Session 82 Div. D: Techno-logical Appli-cations	Session 83 Div. C: Using Socratic Seminar to Develop Critical Thinking	Session 84 Div. A: Gender & Leadership Issues in Education	Session 78 Div. A: Promoting Effective Leadership in Higher Education	Session 80 Div. K: Assess-ment, Multiple Intelligence & Teacher Education			Session 86 Div. H: Quality Work	
9:30 - 10:50 a.m.	Session 87 President Address: Learning About Sex Marquette Room 16th Floor												
11:00 a.m. - 12:20 p.m.			Session 89 Div. I: Enhancing Learning in Training & Adult Education	Session 90 Div. A: Govern. Issues in Public Education	Session 91 Div. A: Block Scheduling	Session 92 Div. D: Intro. to Fuzzy Logic for Social Sciences	Session 93 Div. D: Optimizing Test Develop. & Inter-pretation	Session 94 Div. B: Curric-ulum & Learning	Session 88 Div. J: Higher Education: Philosoph.l Approach to Education			Session 95 Div. F: Putting Rigor in Action Research	

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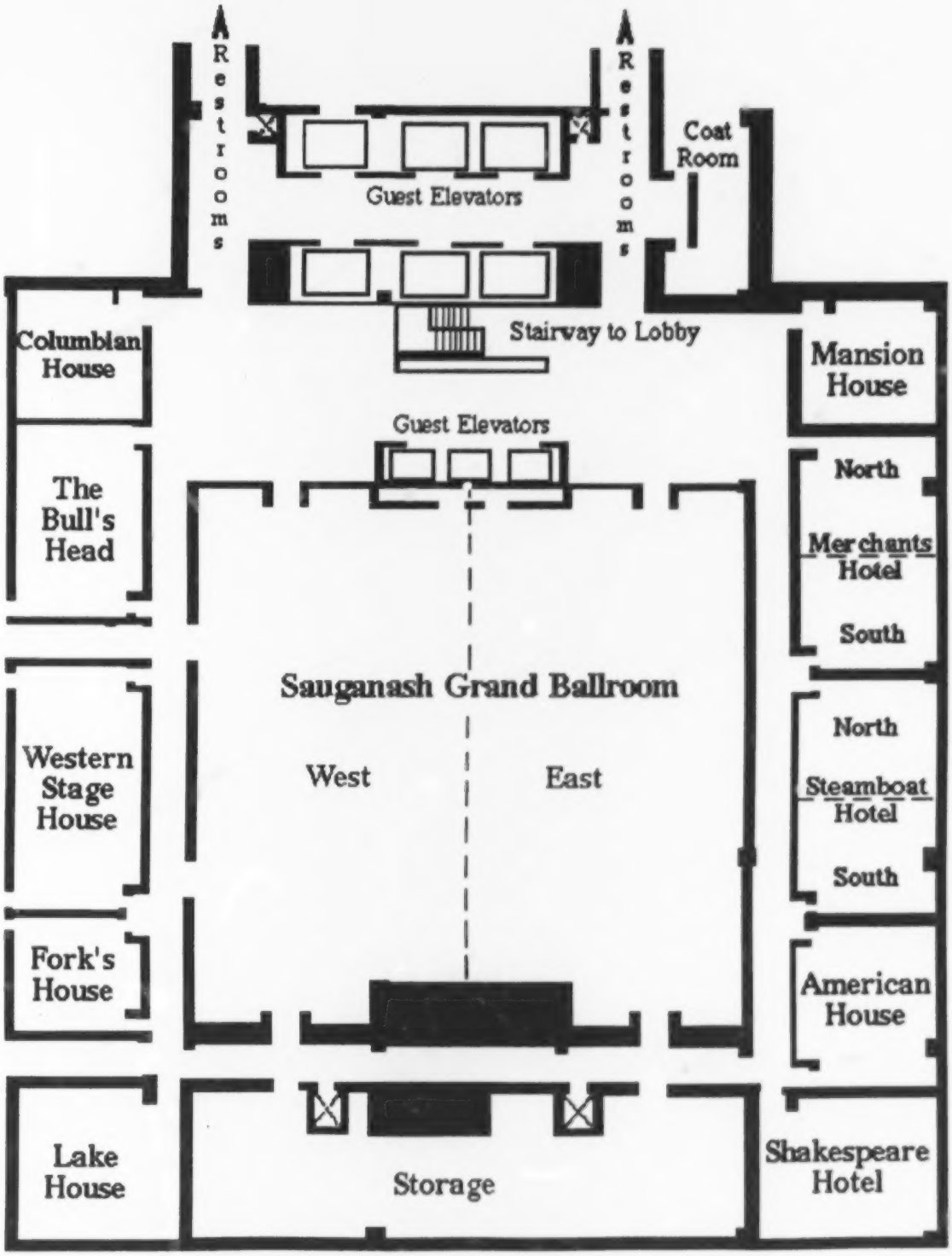
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Guest Elevators
The Bull's Head
North
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MID-WESTERN EDUCATIONAL RESEARCHER

• Official Publication of the Mid-Western Educational Research Association •

The Ohio State University at Mansfield

1136

On the Cover

Ovalwood Hall, opened in 1966 at The Ohio State University at Mansfield, serves as the campus's main administrative and instructional facility.

Through its Mansfield Campus, The Ohio State University extends courses, curricula and resources geographically to meet the educational needs of the people of North Central Ohio. The Mansfield Campus maintains Ohio State's Land Grant tradition of making higher education accessible to traditional and nontraditional students.

One of four regional campuses of The Ohio State University, the Mansfield campus occupies a 600-acre wooded site in the northwest corner of Mansfield, Ohio. Sharing the site with North Central Technical College, the campus comprises six major academic buildings, plus a gymnasium, a bookstore, a child development center, and a plant operation building.

The faculty is a highly qualified, university faculty that involves itself extensively in teaching at all levels. Ninety-five percent of the faculty hold a Ph.D. degree or an equivalent highest degree of their profession.

Students can earn baccalaureate degrees entirely at Mansfield in elementary education, English and psychology. In addition, the campus offers most of the courses necessary to complete a bachelor's degree in business, sociology, and criminology.

Graduate offerings leading to the M.A. are available for area elementary school teachers and the M.Ed. is offered for bachelor degree holders who wish to become elementary school teachers. The Ohio State University College of Social Work offers an MSW degree at the Mansfield campus.

Information for Contributors to the Mid-Western Educational Researcher

The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article.
The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

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Problems Related to Participants' Roles and Programmatic Goals in Student Teaching Supervision
Donald A. Williams, The Ohio State University, Lima
Hema Ramanathan, Butler University
Doug Smith, Coastal Carolina University
Josue Cruz, University of South Florida
Laura Lipsett, The Ohio State University, Columbus
2

Some Cautions Concerning Inferences about Proportions, Differences Between Proportions, and Quotients of Proportions
Thomas Knapp, The Ohio State University
Hak P. Tam, National Taiwan Normal University
11

Special Supplement
MWERA: Promise and Fulfillment
Theresa Strand, MWERA Archivist/Historian
Charles C. Anderson, Jr., MWERA Executive Officer (Ret.)
S1 - S24

Examining What Should Be the Role of an "Internationalized" Land Grant Extension System
Barbara G. Ludwig, Ohio State University Extension
R. Kirby Barrick, University of Illinois at Urbana-Champaign
14

Reviewers for 1997
19

Research Alive
Mentoring: Help or Hindrance?
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20

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24

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25

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Problems Related to Participants' Roles and Programmatic Goals in Student Teaching Supervision

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Abstract

Current practices regarding the roles of cooperating teachers and university supervisors and the goals of student teaching were examined through an analysis of student teaching handbooks from midwest teacher education programs. Handbooks, representing 61 of the 340 teacher education programs in 13 midwest states, were analyzed to determine the roles assigned to cooperating teachers and university supervisors and to compare the goals of these programs to the outcomes measured in their evaluation instruments. The study found that student teaching materials lacked clear statements of program goals and objectives and lacked clear definitions of the roles of cooperating teachers and university supervisors. Correlation analysis indicated a lack of congruence between the stated program goals and the outcomes assessed in evaluative criteria. Recommendations relate to the clarity in defining roles and tasks and consistency between goals and outcomes.

Introduction

Resounding support is given to the belief that student teaching is singularly the most influential experience in preservice teacher education. However, student teaching generally is not accorded the attention warranting such support and rarely is it implemented in a strategic manner commensurate with its perceived importance.

A number of studies have revealed entrenched problems in the structure of student teaching. They call attention to incongruent role expectations of cooperating teachers and the university supervisors and a lack of congruence between the perceptions of participants in the triad (cooperating teacher, university supervisor, and student teacher) concerning the goals of student teaching (Grimmett & Ratzlaff, 1986; Guyton & McIntyre, 1990). It is these problems that have been identified as constraining the successful implementation of student teaching programs that serve as the foci of this study.

Objectives

The purpose of this study was to investigate the stated practices in student teaching as reflected in the supervision handbooks of midwestern colleges and universities. The two major areas examined were (a) the roles of university supervisors and cooperating teachers, and (b) the goals of the student teaching practicum and their corresponding outcomes derived from the institutions' evaluative instruments. The findings were compared to current theoretical frameworks of student teaching and to the extant reform proposals in order to generate recommendations that will define practice in student teaching programs.

In order to conduct this investigation, it was necessary to operationalize the terms "roles" and "tasks." Roles subsume a related group of tasks, and conversely, tasks define the major role categories. For the purpose of this study, *role* and *task* were defined as follows:

1. Role: An essential *function* performed in student teaching which is descriptive of the relationship intended between a cooperating teacher or university supervisor and a student teacher. For example, a cooperating teacher might take on the role of an *instructor* to student teachers.
2. Task: Any prescribed *activity* that a cooperating teacher or university supervisor undertakes in reference to the student teaching experience. For example, in the role of instructor, a cooperating teacher might be assigned the task of "guiding student teachers in their planning."

1139

Additionally, the following questions were addressed:

1. What tasks were specified for cooperating teachers and university supervisors in student teaching handbooks, and consequently, what roles could be inferred from the tasks assigned to these individuals?
2. Were the goals of student teaching specified in cooperating teacher and university supervisor handbooks congruent with the intended outcomes reflected in the evaluative instruments found in those same handbooks?

Review of Literature

Student teaching is commonly viewed as the key element in the development of preservice teachers and a "critical site for the implementation of any educational reform agenda" (Borko & Mayfield, 1995, p. 502). Teachers consistently support this view by ranking student teaching as the most beneficial element of their preservice preparation (Guyton & McIntyre, 1990). Indeed, 77% of university supervisors and 70% of cooperating teachers surveyed believe that student teaching prepares students more than adequately for their first full-time teaching assignment (American Association of Colleges for Teacher Education, [AACTE], 1991).

In view of the perceived importance of student teaching to the development of preservice teachers, it is reasonable to believe that the goals of student teaching and the roles of cooperating teachers and university supervisors would be well defined and clearly articulated. However, student teaching programs, in general, lack clearly stated expectations regarding the roles and tasks of the cooperating teacher and university supervisor and typically lack goals that are congruent with proposed outcomes (Guyton & McIntyre, 1990). Guyton and McIntyre have observed that "The members of the triad experience intrapersonal and interpersonal role confusion during student teaching, uncertainty about their own and others roles, and divergent role expectations of themselves and others" (p. 523). Consequently, the potential for student teaching to produce disappointing outcomes is high, and it is unlikely in such a setting that participants would experience a sense of accomplishment of goals.

Role of Cooperating Teachers

Members of the triad typically hold conflicting views regarding the roles of cooperating teachers and university supervisors (Duquette, 1994). A survey by Grimmett and Ratzlaff (1986) revealed that student teachers, cooperating teachers, and university supervisors disagreed in 35 of 50 categories defining the tasks of cooperating teachers. Where they did agree, participants perceived the role of cooperating teachers to include tasks of evaluation, orientation, and professional development and assistance in planning and instruction. The findings of Grimmett and Ratzlaff confirmed similar findings from previous studies by Castillo (1971) and Copas (1984). Although their specific findings varied, these studies in general revealed conflicting perceptions among members of the triad regarding the role of cooperating teachers.

Agreement concerning the essential function of cooperating teachers has not been forthcoming through national efforts to standardize the roles and responsibilities of student teaching participants. The National Council for Accreditation of Teacher Education (1995) requires, in the Category I standards, that field experiences encourage reflection and provide feedback from the university and school faculty and peers and that such experiences should be a minimum of ten weeks or equivalent. It also stipulates that student teaching be a joint agreement between the schools and cooperating professionals. Category III, Professional Education Faculty, notes that unit faculty who supervise, have preparation and experience in school settings. Graduate students who have responsibility for field experiences should be qualified in terms of study, experience, and training. Lastly, Category III limits 1 full-time faculty member to 18 full-time students. No mention is made of the roles and responsibilities that the different members of the triad should play. Similarly, the 1986 Association of Teacher Educator's (ATE) national guidelines contained only general descriptions of the tasks for cooperating teachers and university supervisors, advancing no specific tasks (Guyton & McIntyre, 1990). Typical of the ATE (1986) guidelines are statements such as "establish and maintain open channels of communication" (p. 17). Guyton and McIntyre point out that such broad statements promote a variety of interpretations by members of the triad who bring individual role expectations to their experience.

While the intended role of cooperating teachers remains poorly defined, the effect of the role assumed by cooperating teachers in student teaching reveals a consistently bothersome pattern. As social agents, cooperating teachers exert the most profound influence on student teachers (Borko & Mayfield, 1993; Calderhead, 1988) yet often exert negative influences (Richardson-Koehler, 1988). Richardson-Koehler's study found that after two weeks in student teaching, preservice teachers had aligned their practice with their cooperating teacher. In general, student teachers' attitudes become more custodial and negative during field experiences (McIntyre, 1984). In addition, cooperating teachers also exercise influence through their evaluation of student teachers. However, the value of cooperating teachers' assessment of student teachers is questionable since they place a premium on being positive in their relationships with student teachers in an effort to bolster their confidence (Dunne & Dunne, 1993). Therefore, given the potential of cooperating teachers to impact the development of preservice teachers, there is substantial reason to define and clarify their role in student teaching.

Role of University Supervisors

The place and value of university supervisors in student teaching is difficult to define given the varied conclusions of individuals who have investigated this subject. Some studies suggest that the effectiveness of student teaching is

related to the assistance and mentoring provided by the cooperating teacher and university supervisor (Glickman & Bey, 1990), and that university supervisors improve a student teacher's performance (Zahorik, 1988) and are an essential component of student teaching (McIntyre, 1984). However other research indicates that the potential of mentoring relationships in student teaching frequently goes unrealized (Smith, 1990).

University supervisors report different views of their importance, seemingly based on their role perceptions. When university supervisors perceive their role to be evaluative, they experienced little satisfaction or accomplishment in their work (Koehler, 1984). However, when university supervisors consider their role to be one of providing intellectual, professional, and emotional support to student teachers, they experienced a strong sense of satisfaction and efficacy (Koehler).

The traditional evaluative role of university supervisors may very well hinder their ability to provide real assistance to student teachers since they are perceived by student teachers more in an assessment role than an assistance role (Calderhead, 1988). Regarding this, Borko and Mayfield (1993) recommended that university supervisors should spend their limited time in the field to help cooperating teachers develop knowledge and skill in serving as teacher educators. In this role, university supervisors would spend their time modeling appropriate supervisory strategies and facilitating the supervision process.

Goals and Outcomes

In addition to the confusion that exists in student teaching regarding the roles and responsibilities of participants, there is a similar lack of clarity with regard to the goals of student teaching. The expectations of cooperating teachers and university supervisors in student teaching was studied by Applegate and Lasley (1986). They found little agreement among the triad in terms of common goals or shared expectations. In addition, Applegate and Lasley found that cooperating teachers, university supervisors, and student teachers focus upon different problems and view specific problems with different levels of concern. Guyton and McIntyre (1990) assert that this finding is an indication of the triad's lack of shared expectations. This lack of congruence in the expectations of triad members contributes to their confusion over perceived goals of student teaching (Guyton & McIntyre, 1990; Grimmett & Ratzlaff, 1986) and presents a significant obstacle in the successful implementation of student teaching programs.

Clinical Supervision

A strong argument for clearly identified and well established roles for cooperating teachers and university supervisors has been made in the research substantiating a clinical approach to student teacher supervision, involving a team effort between the cooperating teacher, the university supervisor, and the student teacher and focusing on systematic and formative evaluation (Glickman & Bey, 1990). Increased control (Armstrong & Ladd, cited in Guyton & McIntyre, 1990); positive self-assessment (Cook, cited in Guyton & McIntyre, 1990); improved supervision (Shuma, cited in Guyton & McIntyre, 1990); and improved teaching and attitude towards teaching (Krajewski, cited in Guyton & McIntyre, 1990) are outcomes related to a clinical supervision approach. Gitlin, Ogawa and Rose (1982) found that shared evaluation among members of the triad promoted self-analysis and reflection on the part of student teachers and resulted in more complex analyses of teaching and in more favorable attitudes toward pupils. However, this gulf between what is known about the clinical approach to supervision and what actually is practiced in the supervision of student teachers persists.

In summary, the student teaching experience seems to lack agreed upon purposes and is plagued with a confusion over the roles and corresponding responsibilities that participants should assume. Solutions to these problems seem to involve the convergence of goal perceptions among student teaching participants (Guyton & McIntyre, 1990). An obvious key to such convergence is clear communication in providing detailed and "better explicated guidelines, role definitions, and instructions" (Guyton & McIntyre, 523). However participants must have common goals and purposes and, in order to build agreement and a shared commitment to goals, participants need to interact in discussing the purposes of student teaching and their perception of one another's roles (Guyton & McIntyre).

Methodology

Sample

This study focused on a content analysis of student teaching handbooks. Accredited institutions offering teacher education programs in the Midwest were identified from lists obtained from the state department of education in the target states. *Midwest* was defined to comprise the following states: Illinois, Indiana, Iowa, Kansas, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. The 340 state-accredited institutions were placed into categories using four major Carnegie classification levels (liberal arts colleges, comprehensive colleges and universities, doctoral granting institutions, and research institutions), and a stratified random sample of 110 teacher preparation programs was selected. Student teaching handbooks and information and policies pertaining to cooperating teachers and university supervisors were requested by telephone from each institution in the sample. From this appeal, 61 handbooks were obtained representing one-fifth of the midwestern teacher education programs. In this sample, the Carnegie classification levels were represented in percentages equivalent to those found in the larger population of midwestern institutions: liberal arts colleges (34%), comprehensive colleges and universities (38%), and doctoral granting institutions (12%), and research institutions (15%).

Instrumentation

Two instruments were used for the purpose of systematically coding handbook statements. The first was designed to record *task* statements found in the handbooks. This instrument was organized according to the six major roles (assumed by either the cooperating teacher or the university supervisor):

1. Orienter - Describes, interprets, the student teaching program to participants, and acquaints student teachers to school culture.
2. Counselor - Engages student teacher as a colleague.
3. Instructor - Organizes, plans, and facilitates learning experiences for the student teacher during the practicum.
4. Facilitator - Promotes effective interaction of triad members in order to achieve the goals of student teaching.
5. Model - Demonstrates professional practices to the student teacher.

These roles had been identified through a review of the literature and preliminary content analysis of student teaching handbooks. The task subcategories, which were compiled from the pilot study, were organized within the major role categories according to the established definitions for these roles.

The second instrument was designed to record the presence of goals and outcomes in the handbooks. Similar to the development of the first instrument, categories of goals and outcomes (see Table 3) were compiled from a pilot study. Goals were defined as statements found in student teaching handbooks concerning the knowledge and skills student teachers were expected to achieve. Outcomes were defined as statements found in evaluative instruments of handbooks concerning the exit competencies necessary for successful completion of the student teaching program. The rationale for documenting and comparing the relationship between stated goals and measured outcomes in student teaching programs was based on the idea that congruence between objectives and the evaluation of those objectives is indicative of consistency of purpose and practice in a program.

The handbooks were analyzed by considering separate statements within the text of the handbooks. Prior to the analysis, four handbooks (not included in the sample) were analyzed to establish rater-reliability, and the four raters were able to achieve an inter-rater reliability of 90% agreement on coded statements. Raters were initially asked to code five handbooks along with one that was coded by all four individuals. The analysis of the common handbook was used as a further reliability check. This procedure was repeated in two more coding cycles until all of the handbooks were coded. Inter-rater reliability (percent agreement of coded statements) for the coding of the common handbooks fell between 85% and 90%.

Findings

Descriptive statistics were generated for the combined role categories and goals and outcomes. These data are summarized in Tables 1, 2, and 3. An examination of Table 1 reveals that of the 836 statements coded for the cooperating teacher, 34% involved instructing tasks, 28% involved evaluating tasks, and 27% involved orienting tasks.

Table 2 presents data for the university supervisor's role and reveals that of the 394 statements coded , 46% involved evaluating tasks, 21% involved instructing tasks, 15% involved facilitating tasks, and 14% involved orienting tasks.

Table 3 shows that the observed frequencies of outcomes stated in the handbooks were consistently higher than the observed frequencies of corresponding goal statements. Outcomes were coded nearly twice as frequently as goals. The total of outcome observations was 608, while goals were coded 337 times.

Correlation analysis was performed on the data gathered through the coding of goals and outcomes. Since both correlates were dichotomous, a phi-coefficient (ϕ)was generated for the observations on each of the handbooks. Additionally, a coefficient of determination (r^2) also was calculated to reflect the degree of interdependence of these two variables. It should be noted that 19 of the 61 handbooks did not include goals or outcomes and therefore could not be analyzed. This analysis is summarized in Table 4 and reveals that statistically significant correlations ($p<.05$) were found between the goals and outcomes in seven handbooks ($.21 \leq r^2 \leq .33$). The correlations (r^2) for the other 35 handbooks ranged from .00 to .13. Therefore, this analysis indicates that in 35 handbooks (84%) no statistically significant correlation was found between the stated goals and outcomes of those handbooks, and even the strongest interrelationship of goals and outcomes ($r^2 = .33$) reflects a rather weak link between program goals and outcomes.

Other findings include the following:

- In the sample of handbooks, 7% (n=4) directly described the role of cooperating teachers and 5% (n=3) directly described the role of the university supervisors.
- Over twice as much space or attention is devoted to the tasks of cooperating teachers as is given to the tasks of university supervisors.
- All of the handbooks delineate the tasks for cooperating teachers.
- Although 84% of the handbooks (n=51) define the tasks of university supervisors, in 16% of the handbooks no mention was made of the university supervisors' tasks. In another 16% of the handbooks the university supervisors' tasks were limited to one or two paragraphs.
- Less than 15% of the handbooks contained a formal statement of the goals of their student teaching program.

Table 1
Frequencies of Coded Statements for Cooperating Teachers' Responsibilities (N=61)

	Freq. Total	% of Role	% of Total
Orienter			
Describes, interprets ST goals to ST	2	1	
Describes, interprets ST goals to CT, Principal	0	0	
Describes & interprets roles, tasks of CT, US	0	0	
Acquaints ST w/ school's philosophy	8	4	
Acquaints ST w/ school's procedures	37	16	
Acquaints ST to CT's classroom procedures	39	17	
Introduces ST to students	39	17	
Acquaints ST to school's physical environ.	33	15	
Acquaints ST to school's social environment	38	17	
Provides workspace, materials, resources	29	13	
Total	225		27%
Counselor			
Assists in job search/writes letters of recommendation	14		
Accepts ST as partner	31		
Inquires w/ ST into teach.-learning process	3		
Total	48		6%
Instructor			
Schedules teaching experiences	40	14	
Guides ST in planning & implementation	44	15	
Promotes application of theory into practice	5	2	
Involves ST w/ clerical aspects of teaching	27	9	
Promotes ST's extra-curricular involvement	19	7	
Arranges for ST to observe other classrooms	18	6	
Provides opportunity for prof. growth	23	8	
Promotes reflection & self-evaluation	19	7	
Helps CT schedule activities for ST	3	1	
Helps ST develop personal teaching style	12	4	
Mentors ST in classroom management	29	10	
Serves as resource person for CT	0	0	
Promotes ST's experimentation & innovation	15	5	
Promotes professional relationships w/ students, parents & faculty/staff	15	5	
Helps ST develop pedagogical skills in teaching	14	5	
Conducts seminar for STs	0	0	
Promotes use of correct written & oral expression in instruction	2	1	
Totals	285		34%
Evaluator			
Conferences, gives feedback to ST	51	22	
Provides ratings & written assessment of ST	45	19	
Confers w/ US regarding ST's progress	18	8	
Confers w/ CT regarding ST's progress	1	0	
Confers w/ US regarding ST's problems	24	10	
Confers w/ CT regarding ST's problems	1	0	
Conducts triadic conferences other than midterm & final	3	1	
Conducts extended conferences w/ US & ST to review midterm & final evaluations	12	5	
Conducts extended conferences w/ CT & ST to review midterm/ final evaluations	1	0	
Periodic evaluation of ST by CT apart from midterm, final evaluation	13	6	
Periodic evaluation of ST by US apart from midterm, final evaluation	1	0	
Assigns final grade for ST	3	1	
Manages the formal evaluations	6	3	
Manages the pre/ post conference cycle	2	1	
Conducts mid-term, final evaluation	50	22	
Totals	231		28%
Facilitator			
Promotes achievement of goals of STg	3	17	
Promotes teamwork between triad members	3	17	
Promotes solution to problems in STg	3	17	
Schedules supervisory visits	0	0	
Maintains communication w/ Principal	0	0	
Serves as a resource for ST	9	50	
Totals	18		2%
Model			
Demonstrates reflective approach in teaching	3		
Demonstrates professional behavior in relational skills	9		
Demonstrates effective teaching & pedagogical practice	17		
Totals	29		3%
Total Statements Coded for CTs	836		

Discussion

The problems cited in the review of literature regarding the confusion of cooperating teacher and university supervisor roles and the lack of agreement concerning the goals and outcomes of student teaching may in part be rooted in the materials disseminated to cooperating teachers and university supervisors. A significant finding from this study involves the paucity of information concerning the roles and tasks of cooperating teachers and university supervisors provided in student teaching handbooks.

These handbooks appear to provide little assistance in helping cooperating teachers and university supervisors to understand their essential roles in student teaching, including the kind of relationship they are expected to develop with each other and with student teachers. Five of the 61 handbooks included formal role statements for both cooperating teachers and university supervisors. None of these five contained definitions of the stated roles. An average of 13.7 statements per handbook related to the tasks of cooperating teachers, and an average of 6.5 statements per handbook related to the tasks of university supervisors. This suggests that a rather limited amount of information concerning participants' responsibilities is available in student teaching materials. When one recognizes that cooperating teachers and university supervisors do not effectively communicate about their respective expectations and goals (Bhagat, Clark, & Combs, 1989; Hoover, O'Shea, & Carroll,

Table 2
Frequencies of Coded Statements for University Supervisors' Responsibilities (N=61)

	Freq. Total	% of Role	% of Total
Orienter			
Describes, interprets ST goals to ST	14	26	
Describes, interprets ST goals to CT, Principal	23	43	
Describes & interprets roles, tasks of CT, US	12	22	
Acquaints ST w/ school's philosophy	2	4	
Acquaints ST w/ school's procedures	1	2	
Acquaints ST to CT's classroom procedures	0	0	
Introduces ST to students	0	0	
Acquaints ST to school's physical environ.	0	0	
Acquaints ST to school's social environment	2	4	
Provides workspace, materials, resources	0	0	
Total	54		14%
Counselor			
Assists in job search/writes letters of recommendation	9	60	
Accepts ST as partner	4	27	
Inquires w/ ST into teach.-learning process	2	13	
Total	15		4%
Instructor			
Schedules teaching experiences	3	4	
Guides ST in planning & implementation	20	24	
Promotes application of theory into practice	7	8	
Involves ST w/ clerical aspects of teaching	1	1	
Promotes ST's extra-curricular involvement	1	1	
Arranges for ST to observe other classrooms	0	0	
Provides opportunity for prof. growth	1	1	
Promotes reflection & self-evaluation	9	11	
Helps CT schedule activities for ST	8	10	
Helps ST develop personal teaching style	1	1	
Mentors ST in classroom management	2	2	
Serves as resource person for CT	8	10	
Promotes ST's experimentation & innovation	2	2	
Promotes professional relationships w/ students, parents & faculty/staff	3	4	
Helps ST develop pedagogical skills in teaching	5	6	
Conducts seminar for STs	13	15	
Promotes use of correct written & oral expression in instruction	0	0	
Totals	84		21%
Evaluator			
Conferences, gives feedback to ST	36	20	
Provides ratings & written assessment of ST	33	18	
Confers w/ US regarding ST's progress	1	1	
Confers w/ CT regarding ST's progress	23	13	
Confers w/ US regarding ST's problems	0	0	
Confers w/ CT regarding ST's problems	4	2	
Conducts triadic conferences other than midterm & final	11	6	
Conducts extended conferences w/ US & ST to review midterm & final evaluations	0	0	
Conducts extended conferences w/ CT & ST to review midterm/ final evaluations	10	6	
Periodic evaluation of ST by US apart from midterm, final evaluation	9	5	
Periodic evaluation of ST by CT apart from midterm, final evaluation	0	0	
Assigns final grade for ST	31	17	
Manages the formal evaluations	14	8	
Manages the pre/ post conference cycle	5	3	
Conducts mid-term, final evaluation	3	2	
Totals	180		46%
Facilitator			
Promotes achievement of goals of STg	6	10	
Promotes teamwork between triad members	11	19	
Promotes solution to problems in STg	7	12	
Schedules supervisory visits	13	22	
Maintains communication w/ Principal	7	12	
Serves as a resource for ST	14	24	
Totals	58		15%
Model			
Demonstrates reflective approach in teaching	0	0	
Demonstrates professional behavior in relational skills	2	67	
Demonstrates effective teaching & pedagogical practice	1	33	
Totals	3	1%	
Total Statements Coded for CTs	394		

1988), the absence of programmatic expectations is even more glaring.

The tasks assigned to cooperating teachers cast these individuals primarily in the roles of evaluator, instructor, and orienter. The role of evaluator seems to focus on formal and informal critiquing of the student teacher's performance, including a strong emphasis on the process of formal midterm and final evaluations. The role of instructor seems to focus primarily on practical concerns such as organizing student teaching experiences; assisting student teachers with planning; and mentoring them in the craft of teaching. Similarly, the role of orienter focuses on acquainting students with practical procedures of the school and classroom.

Given less attention than the cooperating teacher, *the university supervisor is cast primarily in the role of evaluator and secondarily in the roles of instructor, facilitator, and orienter.* The tasks predominating in the role of evaluator are essentially the same as the cooperating teacher's evaluative tasks: to conference, to provide feedback, and to prepare periodic written evaluations.

Table 3
Goals and Outcomes Frequency Totals and Ratios by Categories (N=61)

	Goals		Outcomes	
	Total	Ratio of Hndbks	Total	Ratio of Hndbks
Develop confidence in assessment	23	.38	39	.64
Develop ability to analyze & reflect on teaching	13	.21	9	.15
Link theory to practice	19	.31	5	.08
Accept and act on criticism	11	.18	26	.43
Develop skill in the use of instructional technology	8	.13	18	.30
Develop skill in reflectivity and self-evaluation	18	.30	20	.33
Develop an individual teaching style	10	.16	6	.10
Develop correct use of written & oral expression	10	.16	34	.56
Demonstrate the desire to be a life-long learner	12	.20	3	.05
Develop competence in planning	31	.51	47	.77
Develop sensitivity for individual differences	22	.36	40	.66
Develop skill in classroom management	24	.39	51	.84
Develop professional behavior (responsibility/collegiality)	31	.51	38	.62
Maintain professional appearance	16	.26	28	.46
Gain competence in using a variety of methods	16	.26	36	.59
Develop competence in questioning skills	4	.07	31	.51
Develop competence in instructional skills	12	.20	30	.49
Develop effective communication skills with students	9	.15	34	.56
Develop communication skills with parents and colleagues	13	.21	31	.51
Develop competence in motivational techniques	6	.10	26	.43
Develop ability to determine content to achieve objectives	10	.16	19	.31
Demonstrate competence in content knowledge	19	.31	37	.61

There were two important distinctions between the cooperating teachers and the university supervisors concerning the evaluation of student teachers:

(1) Eighty-six percent of the handbooks specifically require the cooperating teacher to conduct midterm and final evaluations while only 5% assign this task for the university supervisor.

(2) The handbooks do not charge cooperating teachers with assigning the final grades for student teachers but rather assign this task to university supervisors.

It appears contradictory that the cooperating teacher would be assigned the task of summative midterm and final evaluations and not the university supervisor who is responsible for assigning final grades for the student teachers. Since these handbooks do not explain the ways in which student teaching participants are expected to work together in the student teacher's evaluation, the overlapping tasks of evaluation and the contradiction in the assignment of the final grade may contribute to the kind of role confusion found in the research cited earlier.

There are indications that the handbooks in this study do not establish formal structures to enhance teamwork and to create an understanding of the cooperating teacher and university supervisor roles. Only 14 of the 61 handbooks charge cooperating teachers and/or university supervisors with the responsibility to promote teamwork within the triad. The major portion of the university supervisors' orienting and facilitating roles were concerned with organizing and interpreting the student teaching experience. However, only 12 of the 61 handbooks specifically state that the university supervisor is to interpret the student teaching program to school personnel and to student teachers.

In addition to a lack of clearly stated and well defined roles, *this study revealed a lack of congruency between articulated goals and their corresponding outcomes provided in evaluative instruments in the student teaching handbooks.* Only 42 of the 61 handbooks articulated programmatic goals.

1145

Table 4
Correlation Coefficients by Institution

Institution	ϕ[a]	r^2[b]	Institution	ϕ	r^2
Handbook #1	.351	.12	Handbook #22	.289	.08
Handbook #2	.010	.00	Handbook #23	.567	.32*
Handbook #3	.226	.05	Handbook #24	.462	.21*
Handbook #4	.024	.00	Handbook #25	.243	.06
Handbook #5	.000	.00	Handbook #26	.140	.02
Handbook #6	.179	.03	Handbook #27	.140	.02
Handbook #7	.216	.05	Handbook #28	.218	.05
Handbook #8	.025	.00	Handbook #29	.189	.04
Handbook #9	.574	.33*	Handbook #30	.283	.08
Handbook #10	.118	.01	Handbook #31	.466	.22*
Handbook #11	.332	.11	Handbook #32	.356	.13
Handbook #12	.482	.23*	Handbook #33	.277	.08
Handbook #13	.108	.01	Handbook #34	.199	.04
Handbook #14	.087	.01	Handbook #35	.056	.00
Handbook #15	.540	.29*	Handbook #36	.187	.03
Handbook #16	.199	.04	Handbook #37	.094	.01
Handbook #17	.462	.21*	Handbook #38	.059	.00
Handbook #18	.149	.02	Handbook #39	.089	.01
Handbook #19	.092	.01	Handbook #40	.302	.09
Handbook #20	.325	.11	Handbook #41	.059	.00
Handbook #21	.262	.07	Handbook #42	.138	.02

Note. $n = 42$ Only 42 of the 61 handbooks contained statements of program goals.

[a] ϕ: phi coefficient. [b] r^2: coefficient of determination.

* $p < .05$

Moreover, the frequency of outcomes found in the student teaching handbooks examined was consistently higher than the corresponding goals (see Table 3). Consequently, these student teaching handbooks demand more of students through the evaluative instruments than through what is explicated in the goals found in the same materials. This finding raises a serious question: How can student teachers be held accountable for expectations not established in the goals of the student teaching program? This finding may also help to explain the lack of agreement among triad members regarding program goals in the student teaching experience (Applegate & Lasley, 1986; Castillo, 1971; Copas, 1984; Grimmett & Ratzlaff, 1986; Guyton & McIntyre, 1990).

Recommendations

The analysis of the handbooks in this study provides additional insight into the findings of other researchers who have documented role confusion within the triad and a similar confusion in the goals and outcomes of student teaching. Given the limited information found in the handbooks concerning the roles participants are intended to play and the established goals of student teaching, it is not surprising that cooperating teachers, university supervisors, and student teachers hold conflicting perspectives on their collective roles and express confusion over the goals and outcomes of student teaching.

In the absence of explicitly written materials to guide cooperating teachers and university supervisors, individuals are left to establish their own priorities based on their respective experiences. Given the constraints upon communication between cooperating teachers and university supervisors (AACTE, 1991; Bhagat et al., 1989; Hoover et al., 1988), it is unlikely that supervisors will establish stable expectations for student teaching. However, it is quite possible that clear and formal articulation of programmatic goals and related participant roles would facilitate communication within the triad.

The current "state of the art" in the supervision of student teachers, as reflected in student teaching handbooks, does not project the rigor or integrity one would expect of such a key program element. In general, the program materials analyzed in this study were quite traditional in philosophy and structure and did not reflect an application of the research and theory which supports the effectiveness of a clinical approach to supervision.

In order to make student teaching as meaningful and beneficial as possible, teacher educators must know what contributes to the success of the student teaching process. One step in that process is to know what roles cooperating teachers and university supervisors should play. In order to reach such an understanding, current practice must be assessed and compared with theoretical models of ideal practice. Guyton and McIntyre (1990) suggest three necessary conditions to produce appropriate roles, tasks and goals: (a) written role definitions of triad members and written goals for student teaching, (b) interpretation of roles by triad members, and (c) implementation of these roles.

It is incumbent upon professional organizations and accrediting bodies to trumpet the significance of student teaching supervision. As the single most influential experience in preservice preparation, student teaching should be accorded a prominent position in professional standards. As the data suggests, when it comes to actual practice, student teaching supervision has been neglected and not given the thoughtful attention befitting the culminating experience of preservice training.

A prudent response to the concerns addressed in this paper would be for teacher education faculty to engage K-12 teachers in a collaborative development of student teaching program goals and the related roles and responsibilities of student teaching participants. Additionally, effective means of communicating these structures to various participants in student teaching should be developed in order to insure that the goals of student teaching programs are in-

deed realized. Well-conceived and well-communicated program purposes and structures that are developed between university and K-12 faculty have the potential to promote two vital interests in teacher education:

1. Collaboration around program goals has the potential to promote reform in student teaching wherein university and K-12 faculty work collaboratively to marry the cultures of both institutions in a concerted effort to maximize the development of prospective teachers. Such teamwork in student teaching would likely foster a more open exchange of ideas and stimulate the development of new insights and a richer understanding of teaching and learning for all participants.
2. Valuing the expertise of K-12 teachers and engaging them as true colleagues in program development and in mentoring student teachers has the potential to promote the professional development of cooperating teachers and thereby furnish a piece of the reform puzzle.

Thus, the student teaching experience should be thought of as much more than just a bridge from preservice to inservice; it should be conceived as an essential structure to span the rather imposing chasm that separates the cultures of universities and K-12 classrooms.

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Some Cautions Concerning Inferences about Proportions, Differences Between Proportions, and Quotients of Proportions

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Abstract

The purpose of this article is to bring to the attention of the educational research community several cautions regarding the use of inferential statistics for single proportions, differences between proportions, and quotients of proportions. The user of such procedures is urged to pay particular attention to the selection of the appropriate formula for the standard error and to the assumption of the independence of the observations.

Among the statistical procedures that are frequently encountered in the educational research literature are tests of hypotheses about, and/or interval estimates for, single population proportions, differences between two population proportions, and quotients of two population proportions. In survey research or in educational testing, for example, one is often interested in estimating a population proportion based upon a proportion obtained for a random sample drawn from that population. Testing the significance of the difference between or the quotient of two sample proportions is even more common. But despite the ubiquity of those procedures and the supposed simplicity of carrying them out, there are a number of problems associated with applying such techniques. This paper addresses some of the problems that may have escaped the notice of many applied researchers.

Single proportions

Hypothesis testing vs. interval estimation

It is reasonably well known that for many population parameters it is possible to do hypothesis testing "for free", so to speak, by first getting a two-sided 100(1-alpha)% confidence interval for the parameter and then seeing whether the null-hypothesized value of the parameter is or is not in the interval. (See, for example, Wilcox, 1996, p. 118.) Unfortunately, things can get complicated when the parameter of interest is a proportion. The problem is the appropriate formula for the standard error. It is in conjunction with the choice of standard error that a number of difficulties arise.

Hypothesized p vs. sample p

For hypothesis testing, one must use the hypothesized population p, not the obtained sample p, in the formula for the standard error, whereas in interval estimation there is no hypothesized p so one has no choice but to use the sample p. The traditional (and approximate—see below) formula, $[p(1-p)/n]^{.5}$, for the standard error of a single proportion, when doing hypothesis testing, is incorrectly specified in at least one recent textbook (Hinkle, Wiersma, & Jurs, 1994). They use the sample p rather than the hypothesized p in their formula. [On page 216 of that text, Hinkle et al. (1994) acknowledge the problem in a footnote but make matters worse by using the population size N rather than the sample size n in the correct formula for the standard error. They go on to give two worked-out examples using the wrong formula.]

It can be argued that for p's near .5 it doesn't make much difference whether you use the sample p or the hypothesized p, since the product of p and 1-p is very close to .25 in the middle of the p scale. But for a sample p near the high or low end and a hypothesized p near the middle (a not uncommon combination), or vice versa, it can make a very big difference indeed. Tam and Kuo (1996) give examples of hypothesized p's and sample p's for which one can easily arrive at opposite decisions regarding rejection or non-rejection of the hypothesized p, depending upon which formula for the standard error is used.

As an illustration of this problem, consider testing a hypothesized p of .5 for a sample p of .7 and a sample n of 36. Using the hypothesized p in the formula for the standard error yields a "critical ratio" of (.7-.5)/.083 = 2.40, a value that is not statistically significant at the .01 level, two-tailed. Using the sample p yields a ratio of (.7-.5)/.076 = 2.63, which is statistically significant at that level. The latter, incorrect procedure would lead to the rejection of the null hypothesis whereas the former, correct procedure would not.

n vs. n-1

It has been argued, e.g., by Blommers and Forsyth (1977), that the formula for the standard error of a proportion should have n-1 in the denominator rather than n, since a proportion is a special case of a mean (where the data are all 0's and 1's) and the well-known formula for the standard error of a mean has n-1 in the denominator (when the population standard deviation is unknown). For purposes of descriptive statistics, a proportion is in fact a special case of a mean, but that similarity does not extend to inferences regarding means vs. proportions, and using n-1 rather than n is incorrect. Similar to the above argument, for large n it doesn't make much difference whether you use n or n-1, but it can matter for small n.

The derived formulas vs. the usual approximation

As Fleiss (1981, pp. 13-15) and some other authors (e.g., Ghosh, 1979; Blyth, 1986) point out, the popular formula for the standard error, $[p(1-p)/n]^{.5}$, using the hypothesized p for hypothesis testing and the sample p for interval estimation, is an approximation to more complicated formulas. [Hays (1994) provides a similar argument but, like Blommers & Forsyth (1977), he subtracts 1 from the sample size in the formula for the approximation.] If the sample p is used in conjunction with the approximate formula for hypothesis testing, the problem is exacerbated.

The normal approximation to the binomial (the continuity problem)

Even if the correct formula, involving the hypothesized p, is used for hypothesis testing in conjunction with the normal sampling distribution, it must always be kept in mind that the continuous normal sampling distribution approximation to the discrete binomial sampling distribution only "works" for values of np and n(1-p) that are not too small. Moore & McCabe (1989) recommend the use of the approximation when both are greater than or equal to 10, but some authors, e.g., Agresti (1996) claim that the approximation is sufficiently accurate for np and n(1-p) greater than or equal to 5. Fleiss (1981, p. 13) insists that a correction for continuity should also be incorporated in the numerator of the formula for the critical ratio (z) whenever the absolute difference between the sample p and the hypothesized p is greater than $(2n)^{-1}$.

The articles by Peizer and Pratt (1968); Pratt (1968); Blyth (1986); and Ramsey and Ramsey (1988) provide good discussions regarding the accuracy of the normal approximation. A particularly interesting situation arises in small samples in which the sample p is equal to 0 or 1. In either of those cases the usual standard error formula, $[p(1-p)/n]^{.5}$, yields a value of 0, which is of course a ridiculous underestimate of the amount of sampling error. Wilcox (1996) provides a good discussion of a one-sided confidence interval approach to this problem.

Differences between proportions

Most of the cautions just cited for single proportions extend to the case of differences between proportions as well (using the right p; being aware of the approximate nature of the usual formulas for the standard errors; etc.). In addition, there are the following issues.

"Pooled" vs. "unpooled" p's

The traditional formula for the (approximate) standard error of the difference between two independent sample proportions, when testing the null hypothesis of equality of the corresponding population proportions, involves the "pooling" of the two sample p's (p_1 and p_2) in order to get an estimate of the p that the two populations have in common, if the null hypothesis is true. [The formula for the pooled p is $(n_1p_1+n_2p_2)/(n_1+n_2)$.] For interval estimation there is no pooling (again, Fleiss, 1981, p. 29), and the correct formula for the standard error is not for the faint of heart, although its approximation, $[p_1(1-p_1)/n_1 + p_2(1-p_2)/n_2)]^{.5}$, is often quite good. Fleiss goes on to provide an alternative to the critical ratio test that doesn't involve the "pooled" p's.

The connection with chi-square

It is also reasonably well known that the significance of the difference between two independent sample proportions can be tested by applying the chi-square test of independence to a 2x2 table displaying the appropriate frequencies, but the equivalence of the chi-square to the square of the normal z holds only for the "pooled" case and without any continuity correction, unless the corresponding correction is incorporated in the chi-square formula. (The same argument holds for the connection between the z test for a single proportion and the chi-square goodness-of-fit test for a dichotomy.)

Independent vs. dependent sample proportions

If the two samples are "matched" in any one-to-one fashion (same people, paired people in a randomized block design, etc.) all of the formulas are different (but there remains the connection with chi-square via McNemar's test—see Pratt & Gibbons, 1981), since they must take into account the dependence of the samples by virtue of the pairing. One occasionally encounters certain applications in which the pairing is a feature of the design but is not incorporated in the analysis, i.e., the independent-samples test is used instead of the dependent-samples test. The article by Wild and Seber (1993) is particularly good for explaining the procedures for testing hypotheses about the difference between proportions for matched pairs and for determining interval estimates for such differences.

Other issues

Two other methodological articles are of special relevance to the investigation of the difference between two sample proportions. The first, by Beal (1987), compares five competing methods for getting confidence intervals for the difference between two independent sample proportions for very small samples (where the normal approximation is not good). The second, by Storer and Kim (1990), compares seven competing methods for testing hypotheses about differences between proportions, with an emphasis on the relative power of those methods.

Quotients of sample proportions

In most comparisons of sample proportions in epidemiological research, and in an occasional study of two proportions in educational research, the emphasis is placed on the quotient of the proportions (the so-called "relative risk") rather than the difference between the proportions (which the epidemiologists sometimes call the "attributable risk"). There are a number of advantages and a compensating number of disadvantages for emphasizing the quotient instead of the difference, as a descriptive statistic. For example, if the two proportions being compared are .006 and .002 for large sample sizes, a statement such as "the risk of__ is three times greater for __ than for __" may be more defensible than "the difference in risk is four-tenths of a percent". On the other hand, for small samples and for p's near the middle of the scale the difference may be more communicative.

1149

MWERA: Promise and Fulfillment

historical study of the association from its early years through 1994

Mid-Western Educational Research Association

1150

■ Pictures of some sponsoring universities which have supported publication of MWERA's professional journal, the **Mid-Western Education Researcher**, are reproduced from the front covers of the respective journal issues. The current journal which made its official debut in Winter 1991 includes many innovative features directed to producers and consumers of educational research.

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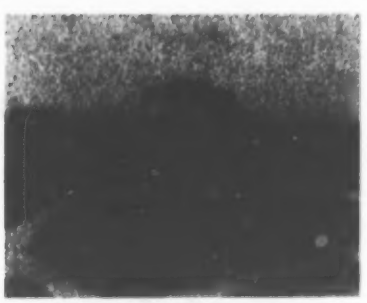

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MWERA: Promise and Fulfillment

Theresa Strand, MWERA Archivist/Historian
Charles C. Anderson, Jr., MWERA Executive Officer (Ret.)

Introduction

This historical study, commissioned by the Executive Board, was designed to provide a broad perspective of the Mid-Western Educational Research Association (MWERA), from the events which led to its founding in the 1970s and its subsequent growth and development through 1994. The study focuses on the promise inherent in the founding of the association and the fulfillment of that promise.

The first step in conducting the study was to review and systematically restructure the extensive collection of association documents assembled over many years by retired Executive Officer Charles Anderson. Guided by recommendations to the Executive Committee by Robert Brennan, MWERA's 10th president, a detailed classification system was developed by Archivist/Historian Theresa Strand, Association documents were organized, cataloged, and stored in the MWERA Archives which were designed to serve as a multi-functional information storage and retrieval system.

Sources of information utilized in the study included official documents, minutes of meetings, correspondence, conference publications, association journals and newsletters, and other records and reports, supplemented by members' recollections. Methods used to conduct the study included content analysis, and telephone and on-site interviews. The study which follows is presented in three major parts: (1) The Promise: MWERA's Mission and Goals; (2) MWERA Today: An Association Portrait; and (3) MWERA's Growth and Development.

1. The Promise: MWERA's Mission and Goals

Association Background

Database reports, published annually by the State and Regional Educational Research Association (SRERA), indicate that MWERA was one of eight regional educational research associations (ERAs) which were founded from 1969 through 1979. SRERA is a Special Interest Group (SIG) of the AERA. Perceived advantages of regional ERAs were that they were easier to participate in than the national ERA, provided increased opportunities for professional communication, facilitated professional training, and reduced travel expenses.

In recalling MWERA's early formative years, Jean Pierce, MWERA Charter Member and the association's sixth president, observed:

> "Some of the original founders ... commented on the excitement they felt in forming an organization which would enable members to meet with others who had similar interests and to encounter quality presentations--all this at locations that would be reasonably close to them. It was felt that national associations can be too overwhelming, and that state associations were too narrowly focused ... And so our regional association was up and running." *(MWER, December 1985).*

1973-1975. Archival documents indicate that the idea for an upper midwest educational research association was sparked and fanned at successive AERA annual conferences. In 1973 (New Orleans), the idea was broached; in 1974 (Chicago), the needs for the new ERA, its merits, and its possibilities were discussed informally; and in 1975 (Washington, D.C.), discussants made plans to survey potential member interest within their respective states.

1976-77. At the 1976 AERA annual conference in San Francisco, planning for the new ERA began in earnest. Results of the state surveys of potential membership interest were reviewed at the SRERA SIG session. Attendees discussed their mutual interest in forming an upper midwest educational research association and made specific plans to hold an organizational meeting independent of AERA, later that year.

On June 19, 1976, the first meeting of the Organizational Committee was held at Loyola University in Chicago. Eight midwest states: Illinois, Indiana, Iowa, Michigan, Minnesota, Missouri, South Dakota, and Wisconsin were represented by the 11 participants. Recalling the meeting two years later, Judson Harmon, MWERA's fourth president, stated in his paper, MWERA: A Brief Account of Progress Over the Past Four Years:

> "It may be correct to say the association was founded on that day for, although we did not have a formal meeting with officers and parliamentary procedures, we *did* have excellent representation from the States and we *did* have the association's first name: the *Upper Midwest Educational Research Association.* We also discussed the following topics: Name, Goals and Objectives, Membership, Officers, Organization, Liaison with other Associations, Finances, Activities, and Communication and Dissemination. Various people were given topics upon which to write position papers. A good sense of purpose and leadership was experienced by all" *(Unpublished paper, February 14, 1978).*

At the 1977 AERA annual conference in New York City, an organizational meeting was conducted at which four primary subcommittees were formed: Constitution, Membership, Convention Program, and Convention Arrangements. The subcommittee members included five future MWERA presidents: Frank Farley, Edward Griffin, Judson Harmon, Randall Isaacson, and Samuel Mayo (MWERA's first Immediate Past President). Specific member assignments were made. A casual note by Richard Stiggins indicated that he considered this meeting to be MWERA's actual founding meeting.

On July 23, 1977, seven members representing five states attended the meeting of the Organizational Committee at Loyola University of Chicago. Informal elections were conducted and four association officers pro tem were selected: Edward Griffin and Samuel Mayo as Co-Chairpersons, Judson Harmon as Secretary, and Steve Colby as Treasurer. The business meeting was focused on naming the new association, scheduling the first annual conference in 1978, planning outreach activities using AERA and NCME mailing labels for targeted states and Canadian provinces, and financial management. Finally, members received specific assignments.

The meeting agenda referred to the association as MWERA or the Mid-Western Educational Research Association. However, members considered changing the name to the Great Lakes Association for Research in Education (GLARE). The MWERA Archives contain an application for the incorporation of GLARE as a not-for-profit association which was prepared on October 20, 1977 but never submitted.

1977-78. Prior to the association's first annual conference in May 1978, two additional planning meetings were held. On December 3, 1977, the Association Council pro tem met in Oshkosh, Wisconsin in conjunction with the annual conference of the Wisconsin Educational Research Association (WERA), and on February 18, 1978 met

at Loyola University of Chicago. Attendees at the meetings focused on formalizing the association's name, applying for incorporation as a non-profit association in Illinois, refining the association's constitution, obtaining member commitments to serve as state representatives, and preparing for the association's first conference and first formal election to be held at the conference.

At the 1978 AERA annual conference in Toronto, outreach activities to encourage potential member interest in the new association continued. Richard Stiggins presented a paper on the founding of the new association, and about 25 interested persons later visited MWERA's hospitality suite.

On May 12, 1978, MWERA conducted its first annual conference at the Indian Lakes Country Club in Bloomingdale, Illinois. The one-day conference was jointly sponsored with the Northern Illinois Association for Educational Research, Evaluation and Development (NIAERED). The conference which was titled "Symposium on Education" emphasized the interaction and exchange of experience between producers and consumers of educational research *(Conference Program, April 10, 1978)*.

The conference attracted 185 attendees--many more than the 40 attendees initially anticipated by the Association Council members at the December 3, 1977 meeting in Oshkosh. In each of the conference's eight meeting rooms, on-going sessions in well-defined areas of interest were conducted throughout the day. These areas included: Predicting Academic Success/Non-Verbal Instructional Approaches, Affective Domain, Measurement, Reform in Higher Education, Program Evaluation, Counseling and Guidance/Outreach Groups, Statistics/Moral Aspects of Education, and Curriculum and Instruction. The presenters included future MWERA presidents Thomas Andre, Judson Harmon, Barbara Hutson, and Dennis Leitner, and MWERA Secretary Nona Tollefson.

The conference included both a day and an evening program. The registration fee was $20 for the day program and $8 for the evening program. The day program included conference sessions, breakfast, and luncheon. The evening program included MWERA's first annual business meeting and formal election, dinner, and an invited address. The election of association officers at the conference was the only election in which a full slate of officers appeared on the election ballot. All future annual elections were conducted by mail. Elected officers included: Edward Griffin, President; Samuel Mayo, Immediate Past President; Judson Harmon, Vice-President; Jean Pierce, Secretary; and Steven Colby, Treasurer. Also, MWERA's constitution was reviewed and approved.

An enthusiastic letter affirming the success of the conference was sent to Co-Chairpersons Edward Griffin and Samuel Mayo on May 15, 1978 by Lesley Steinkellner, Assistant Professor at Indiana University Northwest, who stated:

> "The number of persons who have joined MWERA and the group attending the business meeting were certainly indicators that there is a felt need for such an organization. I want to thank you all for the effort you have expended in making MWERA a reality. I also want to congratulate you and your colleagues on an excellent conference. ... I went to the meeting hoping there would be an opportunity for interaction and conversation with colleagues who were interested in and/or working in areas such as I am investigating. That did indeed prove to be the case."

In a letter to Stephen Colby and Judson Harmon on March 14, 1979, Edward Griffin reviewed MWERA's development and commented:

> "The real founding of the Mid-Western Educational Research Association took place at the Illinois convention, 1978. I credit the early summer meetings at Loyola University as a major factor in our success. .... The AERA is a great organization as it stands. ... However, the credit for [the] MWERA association relates directly to our people."

The date of MWERA's founding was associated with various milestones, including: *(a)* the first organizational meeting held at Loyola University on June 19, 1976; *(b)* the organizational meeting held at the 1977 AERA Annual Meeting in New York City at which four pivotal subcommittees were formed; and *(c)* MWERA's first annual conference in Bloomingdale, Illinois on May 12, 1978 at which the association's first formal election was held. These events were all significantly related to MWERA's founding. However, MWERA's official status was established on August 17, 1978 when MWERA's Application for Incorporation was filed with the Illinois Secretary of State. MWERA was authorized as a not-for-profit corporation in Illinois with an address at the office of Jean Pierce, MWERA's first formally elected Secretary, at Northern Illinois University.

MWERA acquired 266 charter members during a six-week charter membership period. Many of the charter members played leading roles in MWERA's growth and development. The Executive Board held three planning meetings in 1978: on July 28th and October 13th in Kalamazoo, Michigan, and on December 1st in Chicago.

A survey of MWERA membership indicated member preference for a fall conference schedule. Accordingly, the association officers made this transition by conducting both a spring and fall conference in 1979. Both conferences were conducted jointly with other ERAs: the spring conference with the Michigan Educational Research Association (MERA) on March 21-23 in Kalamazoo, Michigan, and the fall conference with the Wisconsin Educational Research Association (WERA) on November 15-16 in Milwaukee.

Mission of the Association

MWERA's Application for Incorporation filed on August 17, 1978 indicates that the purpose or mission of the association is " ... to improve, promote, and disseminate educational research." Association methods for accomplishing the mission are stated in the 1981 amendment to MWERA's bylaws: "The methods used will be the publication of research in a newsletter/journal, presentation of research findings at an annual convention, and other professional activities deemed appropriate by the association."

Association Goals

At the Association Council's meeting on December 1, 1978 in Chicago, MWERA President Edward Griffin identified four major association goals: (1) enhance communication among educational research and evaluation personnel, (2) provide in-service training, (3) serve as liaison with other professional groups and organizations, and (4) promote educational problem solving. In considering the importance of the goals to MWERA's future, Edward Griffin affirmed:

> ".... [it] must be concluded that a research association designed to serve the broad perspective of researchers in a wide variety of settings by providing tools for communication, sharing common problem solving and regional development efforts, new opportunities for professional skill development, socialization, and better procedures for the dissemination of educational research would indeed be serving a valuable and unique function." *(MWER, May 1981).*

Additionally, founding members had strong feelings about the appropriate social climate of the new association. In a letter to Richard Stiggins on June 16, 1977, Judson Harmon wrote:

> "... I think this association should be different from the others with respect to the constraint and tensions I have felt in other professional associations. This ought to be an association where the lowly novice is made to feel welcome, and where the high and mighty occasionally get roasted. This ought to be an association where there are some traditions, some bizarre ceremonies, some pageantry, some song and laughter...."

2. MWERA Today: An Association Portrait

MWERA is a regional association of professional educational researchers primarily from 13 states located in the midwestern region of the United States. These core states include: Illinois, Indiana, Iowa, Kansas, Kentucky, Michigan, Minnesota, Missouri, Nebraska, North Dakota, Ohio, South Dakota, and Wisconsin. Additionally, MWERA has an open membership policy regarding those living in other states, Canada, or other countries.

Membership is open to faculty, students, and administrators from any university, college, and school. Also, the association encourages membership by college and university students engaged in educational research, as well as by educational researchers from business and industry, government and private agencies, and other organizations. Although there are three types of membership dues: Professional, Graduate Student, and Lifetime, all MWERA members enjoy the same rights and privileges, and are subject to the same conditions and restrictions.

Members' rights include the right to vote by mailed ballot or at meetings as appropriate, attend division and general business meetings at the conference, serve on committees, hold elective office, listen to and make conference presentations, enroll in professional training workshops, attend social activities scheduled at the annual conference, and receive a subscription to the association's professional journal, the Mid-Western Educational Researcher.

MWERA's bylaws, purposes, and divisional structure are patterned after those of the American Educational Research Association (AERA). Both associations are designed to encourage, improve, and disseminate information about theoretical and applied educational research. MWERA promotes and disseminates educational research through its annual conference, professional journal, and its scholarship program. MWERA's governance, structure, and operations, as defined by the association's bylaws, are described below.

Governance

The policy-making body of the organization is the Association Council which consists of a six-member Executive Board or Board of Directors and 15 elected Councilors. The Board which serves as the executive arm of the Association Council includes four presidential members (President, Vice-President, President-Elect, and Immediate Past President), Secretary, and Member-at-Large. Other non-elected members of the Board who serve in an ex officio capacity include the Executive Officer, Journal Editor(s), and Historian.

A new Vice President is elected each year to serve a four-year presidential commitment. In the year immediately following his/her election, the Vice-President serves as Program Chair for the annual conference. In consecutive years, the Vice-President moves up one presidential level from Vice-President to President-Elect, then to President, and finally to Immediate Past President. The Secretary, Member-at-Large, and Councilors are elected for two-year terms. However, eight Councilors are elected in one year, and seven Councilors, the following year. Thus, while approximately half the Councilors are serving the first year of their term of office, the other Councilors are serving their second year. Ex officio members of the Board serve a three year term and may be reappointed.

Structure

MWERA's division and committee structure includes 11 division areas and four committee types, as follows:

Association Divisions. MWERA's 11 division areas correspond to those of AERA and include: (A) Administration, (B) Curriculum Studies, (C) Learning and Instruction, (D) Measurement and Research Methodology, (E) Counseling, Human Development, and Special Education, (F) History and Philosophy of Education, (G) Social Context of Education and Motivation, (H) School and Program Evaluation, (I) Professional and Medical Professions, (J) Post-secondary Education, and (K) Teaching and Teacher Education.

For each division area, the Vice-President/Program Chair appoints a Chair and Co-Chair to serve on the Program Committee for a two-year term. The Chairs and Co-Chairs represent their respective division's professional interests, needs, and goals. They receive, review, and approve proposals for conference papers/symposia under the direction of the Program Chair.

Association Committees. MWERA's committee structure includes six permanent standing committees, other standing committees which are discontinued at the completion of their missions, subcommittees which may be appointed by any committee chair, and other ad hoc committees. The responsibilities of the six permanent standing committees are briefly described below:

- Membership Committee is responsible for all developmental and public relations efforts with potential members. The committee which is chaired by the Member-at-Large includes Councilors and other persons who may be appointed by the President.

- Nominating Committee is responsible for conducting nomination procedures, including presentation of a slate of potential officers who are able and willing to serve. The Committee includes the President, President-Elect, and Immediate Past President.

- Tellers Committee, a three-member committee chaired by the Secretary, is responsible for conducting the association's elections, including preparation of ballots, mailing, and determining results of the election and issues presented on the ballot.

- Editorial Board is responsible for overseeing all association-related publications. The Journal Editor serves as chair of the Editorial Board.

- Program Committee is responsible for arranging program content and for making local arrangements for the annual conference. The committee includes the Vice-President/Program Chair, Division Chairs and Co-Chairs, and Coordinator for Local Arrangements. The Vice-President/Program Chair arranges for conference speakers and makes decisions about papers to be presented. Division Chairs and Co-Chairs are responsible for conducting blind reviews of papers and symposia utilizing MWERA members as reviewers.

- Awards Committee is responsible for all awards presented at the annual conference. The committee includes the Immediate Past President and the President-Elect.

Operations

MWERA's major association activities revolve about scheduled meetings of the Board of Directors and Association Council, functional roles of MWERA officers, association elections, annual conference, and publication of the association journal. These are described below.

Scheduled Meetings. The term of office generally begins immediately after the close of the annual conference and continues through the next annual conference. The new Board of Directors meets at the conference site on Saturday afternoon to review and coordinate plans for the coming year. Additional scheduled meetings include an interim winter meeting of the Board of Directors, usually in Chicago. An Association Council meeting and a General Business meeting are conducted during the annual conference in October. Informal meetings which may be held at other times during the year include telephone conference calls and e-mail correspondence.

Functional Roles of Officers. MWERA's bylaws designate the functional roles of MWERA's elected and appointed ex officio officers:

- Vice-President, as Program Chair, implements Board of Directors's guidelines for appointing all Division Chairs and Co-Chairs; and manages the program for the annual conference, including preparation of the Call for Proposals, the Special Program Issue of the Mid-Western Educational Researcher, and the Conference Abstracts.

- President, as chief officer of the association, ensures implementation of MWERA's bylaws, conducts all official meetings, takes whatever actions are deemed appropriate by the Board of Directors and Association Council, appoints committees and task force groups or delegates such authority to other officers, and presents the presidential address at the annual conference.

- President-Elect prepares the association budget for approval by the Association Council and conducts official meetings in the absence of the President.

- Immediate Past President serves as Chair of the Awards Committee.

- Member-at-Large serves as Chair of the Membership Committee and conducts the annual conference evaluation.

- Secretary, under direction of the President, prepares the agenda and minutes for the respective meetings of the Board of Directors and Association Council, presents proposed constitutional changes to the membership at the annual conference, conducts the annual election, including preparation and mailing of the ballots; and chairs the Tellers Committee which tallies election returns.

- Councilors serve on the Membership/Recruitment Committee or other committees. The Councilors represent membership and constituency interests at all levels of governance. They review and approve all policy and constitutional issues, and approve all budgets, financial reports, and dues assessments.

- Executive Officer maintains membership records and association accounts, receives all monies for the association, manages finances and bank accounts under the direction of the Board of Directors, and prepares and presents the association's annual financial statements. This position carries with it an honorarium and expense account approved by the Board of Directors.

- Editor(s) and/or Co-Editor(s) appoints an Editorial Board under guidelines established by the Board of Directors; solicits manuscripts for publication in the association journal; prepares, publishes, and distributes the association journal to members and others, as approved by the Executive Committee; and solicits funding and financial support as approved by the Board of Directors.

- Historian collects, categorizes, and maintains the holdings of the MWERA Archives; provides informational services and products; and prepares historical studies.

Elections

Each year, the membership votes for a new Vice-President and for seven or eight Councilors, and any proposed amendments and/or resolutions, and every other year, the membership votes for a new Secretary and new Member-at-Large. The Secretary conducts the elections by mail ballot. Each election envelope mailed to a MWERA member includes a cover letter prepared by the Secretary, the election ballot displaying candidates' names and proposed amendments and/or resolutions, candidates' biographies, and a return envelope. The Tellers Committee which tallies the election returns is chaired by the Secretary.

Annual Conference

MWERA's annual fall conference is the association's major event of the year. The conference involves the cooperation of many individuals in numerous activities involving conference planning, implementation, and evaluation. Conference presentations include invited addresses, paper/symposia, various types of interactive sessions, and the presession professional development workshops. Other scheduled activities include the conference luncheon; association meetings of the council, general business, and divisions; and social events, including the President's Reception and the informal Cracker Barrel Social.

Association Publications

The Mid-Western Educational Researcher is MWERA's official publication. The professional journal is published three times a year and includes research articles and reports, overviews of annual conferences, invited addresses, and other features. Journal issues devoted to special topics are published on an occasional basis. Also, MWERA's annual conference program is published as the Special Program Issue of the journal. The Vice-President/ Program Chair serves as editor of the special program issue, and also prepares the Annual Conference Announcement, Call for Program Proposals, and the Conference Abstracts. Other association publications include the MWERA Brochure and the MWERA Membership Directory.

3. MWERA's Growth and Development

The MWERA Timeline, on pages 20-24, traces the association's growth and development from the pioneering spirit of the seventies, through the association challenges of the eighties, and the organizational adjustments in the early part of the nineties. An overview of developmental changes that occurred in the areas of membership, constitutional amendments, annual conferences, and association journals follows.

Membership

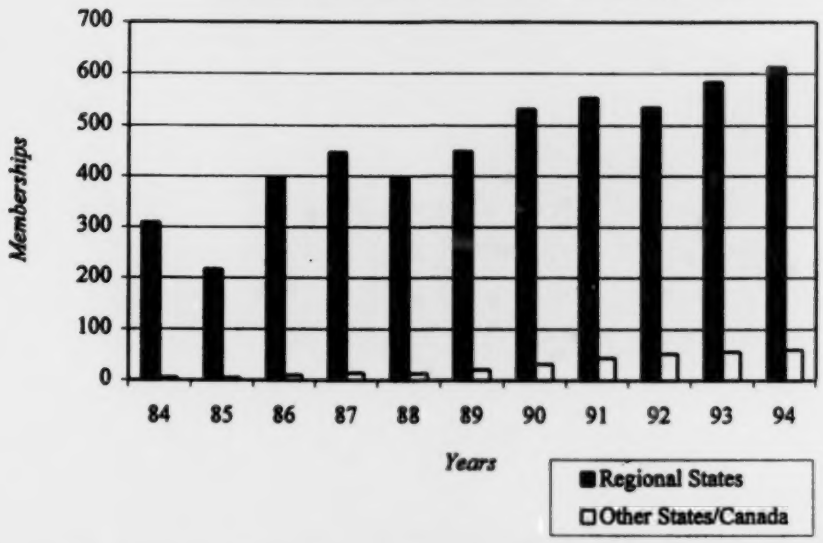
As Treasurer/Executive Officer from 1980 through 1995, Charles Anderson developed and maintained a MWERA membership database which facilitated preparation of statistical data reported in this study. Membership data were generated consistently by calendar year, from January 1st through December 31st. MWERA members include those in three primary membership categories: professional, graduate student, and lifetime. Also, MWERA members are typically located in the 13 midwest regional states or in other states and Canada.

Table 1, on the next page, presents annual membership data for 11 years, from 1984-1994. Findings indicate that total memberships more than doubled in size from 314 in 1984 to 673 in 1994. Annual memberships ranged in size from a low of 222 in 1985 to a high of 673 members in 1994. Sizable drops in membership occurred in 1985 and 1988 which were offset by sizable increases in 1986 and 1989. In 1989, memberships began to accelerate, resulting in an increase of 203 members by 1994.

Table 1
Annual MWERA Memberships from 1984-1994, by Regional State, Other States/Canada, and Total Memberships

Regional States	1984	1985	1986	1987	1988	1989	1990	1991	1992	1993	1994
Illinois	96	63	124	114	115	127	138	164	173	197	207
Indiana	16	16	35	38	29	35	51	54	61	66	84
Iowa	11	13	29	30	15	11	22	16	19	27	23
Kansas	21	16	27	24	30	28	23	29	29	27	35
Kentucky	1	1	2	5	2	1	2	3	3	3	6
Michigan	24	19	30	24	26	25	26	33	26	16	23
Minnesota	6	4	5	5	5	5	8	8	8	9	6
Missouri	7	1	5	13	11	10	16	19	24	19	18
Nebraska	10	3	10	8	6	12	24	17	16	19	17
N. Dakota	8	3	5	3	1	1	1	1	1	1	4
S. Dakota				1	1	2		1	2	6	3
Ohio	78	54	96	113	113	146	175	162	136	160	157
Wisconsin	32	25	31	74	44	47	47	49	40	37	36
Total Reg. States	**310**	**218**	**399**	**452**	**398**	**450**	**533**	**556**	**538**	**587**	**619**
Other States/Canada	4	4	8	9	11	20	30	41	49	53	54
Total Memberships	**314**	**222**	**407**	**461**	**409**	**470**	**563**	**597**	**587**	**640**	**673**

Figure 1
Comparison of MWERA Memberships from Regional States and Other States/Canada, by Year from 1984-1994



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The annual membership pattern across all regional states is similar to total MWERA memberships. States with the most MWERA memberships include Illinois and Ohio, followed by Indiana, Iowa, Kansas, and Michigan. In 1994, there were 207 members from Illinois, 157 from Ohio, 84 from Indiana, 35 from Kansas, 23 from Iowa, and 23 from Michigan.

Figure 1, included on the preceding page, displays the comparative number of MWERA memberships across all regional states with MWERA memberships from other states and Canada. Findings affirmed that total membership across all regional states was predominantly higher than total membership for other states and Canada. However, there was a small but steady increase in memberships from other states and Canada from 4 in 1984 to 54 in 1994.

Graduate student memberships are considered vital to MWERA's continuing success as a regional educational research association. Table 2, on the following page, presents comparative membership data for graduate students, professionals, and total members by regional state, from 1992 through 1994. Findings indicate that total MWERA membership across all regional states increased by 81--from 538 members in 1992 to 619 members in 1994. Of the 619 members, 421 were professionals and 198 were graduate students, suggesting an approximate ratio of 2.12 professional memberships for each graduate student membership.

Figure 2, on the following page, displays the comparative number of total professional and total graduate student members by year. Figures 3a-3c display the comparative membership of professionals and graduate students by regional state and year. Findings indicate that Illinois and Ohio which had the highest number of MWERA memberships also had the highest number of graduate student memberships, followed by Indiana.

Association members in general appear to have ambivalent feelings concerning continuing growth in MWERA membership. Although increased membership size may have its advantages, there is some concern that MWERA's unique qualities as a smaller organization may undergo change.

Constitutional Amendments

MWERA's original constitution was reviewed and approved by membership at the first formal election conducted at the May 12, 1978 conference. Preceding events included: formation of a four-member Constitution Committee at the 1977 AERA annual conference; transmittal of a draft version of the constitution and a cover letter dated June 16, 1977 from Judson Harmon to Edward Griffin and Richard Stiggins; and review of the draft constitution by participants at the December 3, 1977 meeting in Oshkosh, and the February 18, 1978 meeting in Chicago.

Subsequent revisions to the association's bylaws were made by proposed amendments which were listed on the election ballot and voted upon by the MWERA membership in the annual elections. Archival records of proposed and approved amendments beginning in 1981 are included in the MWERA Archives. Highlights of the amendments to the bylaws appear below:

- **Committees.** The Editorial Board and Membership Committee were given status as Permanent Standing Committees in 1981 and 1984, respectively. ... Appointment, composition, and responsibilities, as appropriate, were designated for the Membership Committee, Tellers Committee, Nominating Committee, and Division Chairs. ... In 1990, MWERA's Divisions were restructured to correspond with those of AERA.

- **Elected and Appointed Officers.** Officer appointees were classified as ex officio (non-voting) members. In 1987, the appointed position of Executive Officer and his/her designated responsibilities were established. Also, the elective office of Treasurer was replaced by an elected Member-at-Large whose major responsibility was serving as Chair of the Membership Committee. ... Terms of office for elected and appointed officers were designated.

Table 2

Comparison of Graduate and Professional MWERA Memberships, by Regional State and Total Regional States, by Year from 1992-1994

	1992			1993			1994		
Regional States	Grad.	Prof.	Total	Grad.	Prof.	Total	Grad.	Prof.	Total
Illinois	65	108	173	70	127	197	75	132	207
Indiana	13	48	61	22	44	66	35	49	84
Iowa	1	18	19	7	20	27	9	14	23
Kansas	4	25	29	5	22	27	6	29	35
Kentucky		3	3		3	3		6	6
Michigan	6	20	26	7	9	16	7	16	23
Minnesota		8	8	1	8	9	1	5	6
Missouri	10	14	24	7	12	19	3	15	18
Nebraska	8	8	16	8	11	19	4	13	17
N. Dakota		1	1	1		1	1	3	4
S. Dakota	1	1	2		6	6		3	3
Ohio	46	90	136	60	100	160	52	105	157
Wisconsin		40	40	3	34	37	5	31	36
Total Reg. States	**154**	**384**	**538**	**191**	**396**	**587**	**198**	**421**	**619**

Figure 2
Comparison of MWERA Graduate and Professional Memberships Across All Regional States: 1992-1994

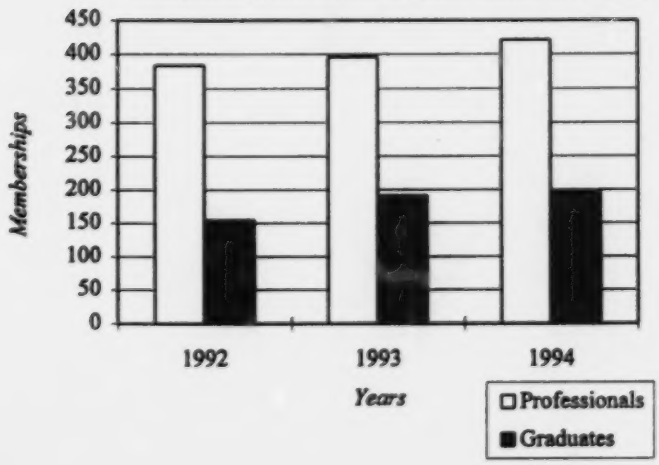


Figure 3a
MWERA Graduate and Professional Memberships, by Regional State and Year: 1992

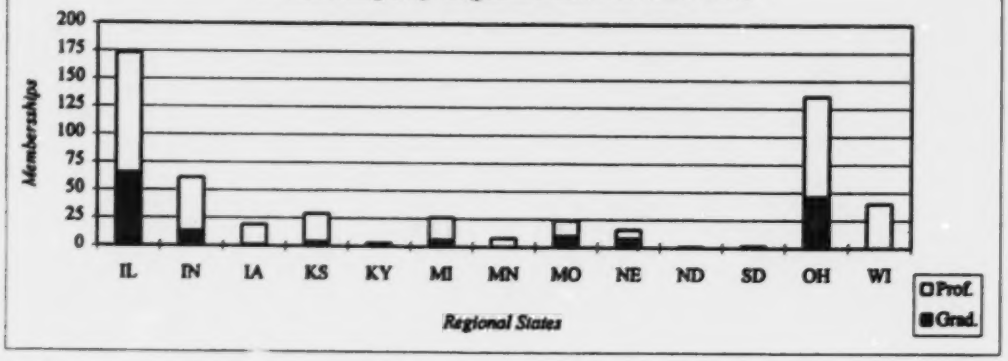


Figure 3b
MWERA Graduate and Professional Memberships, by Regional State and Year: 1993

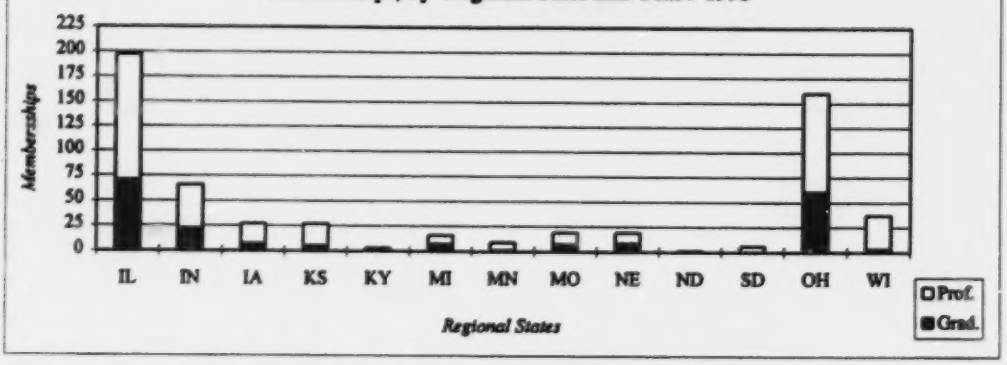
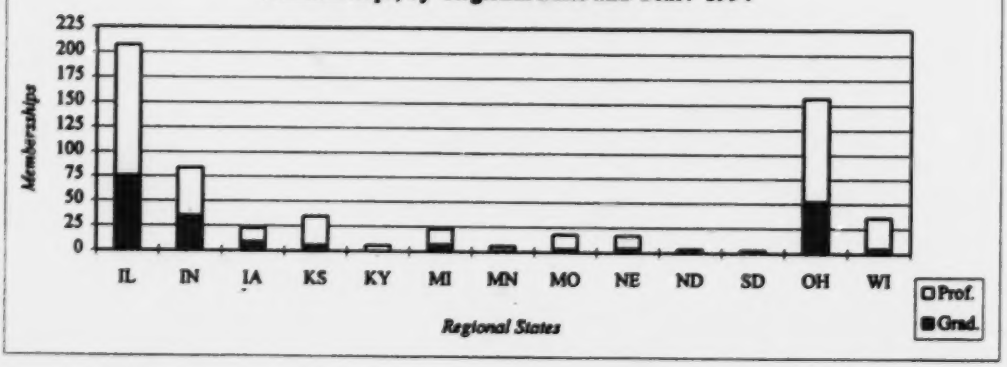


Figure 3c
MWERA Graduate and Professional Memberships, by Regional State and Year: 1994



▸ **Nominations and Elections.** Specific procedures used in conducting the mail elections were modified. Policies in filling vacancies in officer positions were designated.

▸ **Meetings and Business.** In 1985, an amendment specified that at least one convention be held each year and that at least one session at the convention be set aside for an open business meeting for the entire membership ... In 1991, professional membership dues were increased to $18 to help cover rising organizational expenses and those associated with the new association journal. (This represented the first increase in dues since 1982.) Annual membership dues for graduate students remained at $10. ... In 1992, Lifetime membership dues were established at 10 times the annual professional membership dues.

Annual Conferences

From 1978 through 1994, MWERA conducted 18 annual conferences, and also, initiated several important changes along the way. MWERA's first annual conference was conducted in spring of 1978. However, a decision was made to change to a fall conference schedule which was accomplished by conducting both a spring and fall conference in 1979.

In its early developmental years, MWERA established liaisons with other organizational ERAs in the midwest and co-sponsored six annual conferences in different cities and states: in *1978* and *1982*, in Bloomingdale and Chicago, respectively, with the Northern Illinois Association for Educational Research, Evaluation, and Development (NIAERED); in *Spring 1979*, in Kalamazoo with the Michigan Educational Research Association (MERA); in *Fall 1979*, in Milwaukee with the Wisconsin Educational Research Association (WERA); in *1981*, in Des Moines with the Iowa Educational Research and Evaluation Association (IEREA); and in *1983*, in Kansas City with the Psychological and Educational Researchers of Kansas (PERK).

In 1980, MWERA held its first independent annual conference in Toledo, Ohio. Beginning in 1984, MWERA made its transition to independently conducted conferences to be held on a regular basis in Chicago at the Bismarck Hotel. The hotel, conveniently located and affordable, was well-received by members and continued to be the site of MWERA's annual conferences through 1995.

MWERA regularly offers professional development workshops on Wednesday, preceding the regular conference. Additionally, a concerted effort has been made to increase student membership through incentives, such as dedicated sessions, scholarship program which provides a fee waiver and complimentary membership for three students each year, and a Certificate of Graduate Student Participation to students who author a paper presented at the conference.

MWERA's annual conference structure is stabilized. The two and one-half day conference begins on Thursday morning and ends at Saturday noon. Conference highlights include featured speakers (conference opening on Wednesday evening, keynote address on Thursday morning, conference luncheon on Friday, and the Presidential Address usually on Saturday morning. Other conference features include scheduled meetings of the MWERA Council, General Business meeting open to the membership, and Division meetings, and the Exhibit Hall for publishers displaying materials and offering services to educators.

Association Journals

MWERA's official publication is its association journal which has been published in three different formats: (1) as a mini-journal, the *Mid-Western Educational Researcher*, from October 1980 through Spring 1987; (2) as a newsletter, *MWERA Researcher*, from Spring 1988 through Fall 1990; and (3) as a full-size professional journal, *Mid-Western Educational Researcher*, from Winter 1991 through the present. Each of the association publications has had its own unique characteristics, in terms of journal layout, format, and institutional support.

Northern Illinois University in DeKalb was the home base for the mini-journal, and Leonard Kise served as editor for its duration, from 1980 through 1987. During these years, his co-editors included Jean Pierce (1980-1981); Roberta Starkey (1982); and Robert Rosemier (1983-1987). The mini-journal, 5½ by 8½ inches in size, was published three times a year. Its content included conference abstracts, association news, presidential addresses, invited addresses, and other articles. Publication problems included shortage of manuscripts, difficulty in obtaining reviewers, and sizable increases in expenses. The mini-journal ceased publication after its final issue in Spring 1987.

The home base for the MWERA newsletter was Kent State University in Ohio, where Sonya Blixt and Thomas Dinero served as newsletter editors for three years, from 1988 to 1990. The buff-colored newsletter, 8½ by 11 inches in size, was published three times a year. Each issue had a special focus: the first concentrated on the previous conference; the second on the Call for Proposals; and the third, prepared by the Vice-President/Program Chair, was the Program Issue for the upcoming conference. Newsletter content included conference highlights, presidential addresses, invited addresses, and other articles.

The new and current full-size journal made its debut in Winter 1991. The journal is published by a team of editors who serve a three-year term. The first team of editors included Isadore Newman, University of Akron, Ohio and Gregory Marchant, Ball State University, Indiana. The second team of editors, whose term began in 1994, included Editor Ayres D'Costa, The Ohio State University, and Associate Editors Susan Brookhart, Duquesne University, Pennsylvania, and John Surber, University of Wisconsin. This study covers MWERA's history through 1994 but since then, the journal has continued in its established format and now has its third team of editors.

The journal is published three times a year. A fourth issue, the Special Program Issue, is prepared by the Vice-President/Program Chair. Journal features include an Editorial Board, blind reviews of submitted manuscripts, and institutional support. Photographs of sponsoring institutions are featured on the journals' front covers *(see page 2)* and brief descriptions of their respective educational programs are reported inside. Journal content is focused on association business, research and other articles of interest to the membership, and featured columns. Occasional journal issues may be devoted to a specific topic, such as the Special Multicultural Issue *(MWER, Spring 1992)*.

Association business content has generally included: overviews of annual conferences, summaries of conference evaluations, election results, general announcements, membership applications, Call for Program Proposals, and Requests for Nominations. Research and other articles of interest have included: book reviews; interviews with leaders in education, such as Benjamin Bloom, Robert Slavin, and Robert Sternberg; presidential addresses; and other invited addresses. Featured columns have included: *Research Alive*, practical applications of recent educational research; *Voices in Education*, responses of noted educators to a series of questions; and *Both Sides Now*, presentation of opposing reactions to a targeted issue. Journal features are subject to change with each new team of editors.

Fulfillment of the Promise

The pioneering members of the association deserve special recognition for their efforts in actualizing MWERA and guiding it toward future success. They envisioned the midwest regional ERA, were committed to gradually moving from the early exploratory phases through the planning phases, and finally shifting into the implementation mode. MWERA's first annual conference on May 12, 1978 is associated with the successful launching of the association.

MWERA's operational guidelines over the years have remained remarkably faithful to the organizational guidelines generated by the founding members. MWERA's mission and methods for their accomplishment, as specified in the association bylaws, have clearly been addressed. MWERA's activities have centered on improving, promoting, and disseminating educational research.

With respect to association goals, MWERA has enhanced communication among educational research and evaluation personnel through its annual conferences and publications, including the professional journal, conference

abstracts, directory of membership, and opportunities for socialization. MWERA's annual conferences feature a wide array of presentation formats which allow authors great flexibility in disseminating their work. Professional inservice training opportunities have been provided by workshops generally presented on the day before the conference sessions begin.

The Mid-Western Educational Researcher, the association's official journal is professionally respected and is now among periodicals deposited in the Library of Congress. In addition, all substantive articles from the Mid-Western Educational Researcher are now indexed in the ERIC Current Index to Journals in Education (CIJE). Thus, communication also has been enhanced at the national level.

Efforts to establish effective relationships with other ERAs were more important during MWERA's early years when it conducted jointly-sponsored annual conferences with other ERAs. MWERA has maintained its professional ties with AERA and SRERA, the AERA/SIG of State and Regional ERAs. Associations which have merged with MWERA include the *Wisconsin Educational Research Association (WERA)* and the *North Central Regional Association for Community-Junior College Research (NCRA)*. Earlier approaches to promoting educational problem solving through regional research collaboration have been modified by alternate approaches such as electronic and conference forums.

MWERA may be characterized as a member-friendly association. Members' opinions are typically sought through membership surveys and annual conference evaluations. MWERA's social climate may be characterized by its friendliness and relaxed atmosphere for scholarly communication and graduate student supportiveness. Planned social events include the New Member Welcome, Cracker Barrel Social, conference luncheon which is included in the conference registration fee, and the President's Reception.

MWERA's prestige and success as a professional association may be viewed from many perspectives. The association's basic strength lies in its membership size and diversity of members' geographic locations and institutional affiliations. MWERA's 16 presidents from 1978-79 through 1993-1994, are representative of eight states, and its councilors, 14 states. MWERA's annual conference in 1993 was attended by colleagues from 27 states, Canada, Germany, South Africa, and Taiwan; graduate students comprised approximately one-third of the attendees, and nearly 100 different institutions were represented by the presenters *(MWER, Summer 1994)*.

MWERA's success may be associated with factors relating to its membership: the founding members' dedication, insight, and perseverance; the conscientious pro bono work of MWERA members; and MWERA members' continuing commitment. Twenty-six (10%) of MWERA's 266 charter members are still active members in good standing. Also, 54 charter members have served as MWERA officers, including:

- MWERA's first Immediate Past President, Samuel Mayo, Co-Chairperson of the Association Council pro tem.
- Nine MWERA Presidents: Thomas Andre, Frank Farley, Edward Griffin, Judson Harmon, Barbara Hutson, Randall Isaacson, John Kennedy, Isadore Newman, and Jean Pierce.
- Seven Officers, including: Treasurer/Executive Officer Charles Anderson, Treasurer Steven Colby, and Secretaries Patricia DeJarnette, Orpha Duell, Mary Link, Jay Price, and Nona Tollefson.
- Two Journal Editors: Roberta Starkey and John Surber.
- Thirty-five Councilors identified in Archives documents. Additionally, MWERA's life members include five Charter members: Bobbie Anthony, Orpha Duell, Marcia Mentkowski, Jean Pierce, and Bruce Rogers.

The historical study concludes with two additional documents: the first is correspondence from Past President Thomas Andre in which he recollects some historic highlights of his experience as a MWERA member, followed by the five-page MWERA Timeline, a chronological overview of MWERA's history from 1973 - 1994.

One Past President Recollects 20 Years of MWERA ...

Thomas Andre, Ph.D.
Department of Psychology
and of Curriculum and Instruction
Iowa State University

October 1, 1996

While I am the most recent past president of MWERA, (Greg will take that honor in about 24 hours), by chance I was also involved in the first MWERA convention. In 1978, I was a fairly new assistant professor at Iowa State University. I had recently moved from SUNY, Cortland. I had two young children, a recently purchased house, and a relatively low salary.

While my career was going OK, I was feeling a sense of isolation. As many new assistant professors do, I could recall the great research team I had worked with in graduate school. There were at least 10 of us, faculty and graduate students, working on the same types of research, talking nightly about similar studies, and stimulating each other's curiosity and intellects.

Then came graduation and the first job. And a funny thing happened. While I had great colleagues at Cortland and an office mate who had somewhat similar interests to mine, it wasn't the same. Everybody was pretty much following his or her own research paths and, while we could talk about each other's work, the same level of intellectual excitement that had been engendered by my graduate school research team was gone. I thought maybe it was that Cortland didn't have a graduate program.

So when a job opened at Iowa State University (ISU) in Ames, we moved there. As I am sure you can guess, while ISU helped, the intellectual experience of graduate school was still not reconstructed. I had attended AERA and knew that conferences engender some of the excitement I was missing, but without grant funds, I couldn't afford more than one conference a year.

And then I received a letter. It discussed a new organization to be formed and announced the first annual meeting. By chance, Richard C. Anderson, my graduate school advisor, was to be the first invited speaker. The meeting would be in Chicago; I could drive there and it would cheap! Clearly I had to go. So I submitted a paper; it was accepted and on May 12, 1978, I was at the Indian Lakes Country Club for the first meeting. That first meeting had its strengths and weaknesses, but it did rekindle some of the intellectual excitement I was looking for. Here was a second conference I could afford!

The first business meeting was held in a sunken bar; I sat there, sipping white wine, and was enthralled by the process of putting together the organization. I have to admit: it was the most pleasant MWERA business meeting I have ever attended. Maybe they should all be held in sunken bars. While I don't remember the details of the meeting, I do remember we reviewed the constitution or bylaws. I thought, we could do this in Iowa also. When I got back to Iowa, I talked it over with colleagues and we ended up creating an Iowa Educational Research and Evaluation Association, in part on the MWERA model. I guess Bandura really does have some validity in his theorizing.

One of the interesting things to me during the first years of MWERA was that we moved from city to city. The young adventuresome lad I was then enjoyed the adventure of discovering a new city. Kalamazoo had the greatest variety of restaurants for a city of its size that I had encountered to that time; Milwaukee had a great seafood

restaurant on the lake; Toledo had an incredible art museum and we ate in Tony Packo's, home of Hungarian hot dogs, Klinger's (of MASH fame) favorite restaurant. If you think I judged a city by its food, you probably are right!

Of course, not all members of MWERA had the same interest in new cities. By the time of the Kansas City convention when about 65 MWERA members attended, it was clear our moves around the region were prohibiting too many members from coming. Wiser heads than mine decided to fix us in Chicago. Of course, they were right. Much of our growth as an organization can be attributed to that decision.

MWERA prides itself on nurturing new faculty and graduate students. But I also think we should realize that one of the major intellectual contributions of MWERA has been to provide a forum for presentations by some of the major figures in educational research. It would be a fascinating exercise to trace the intellectual themes in MWERA's invited presentations over the past 20 years. Let me just recall some highlights:

- David Bennett, Deputy Superintendent of Milwaukee Schools, in 1979, discussed the schools' research needs. The theme of his speech is echoed in the action research and design experiments of today.

- Barbara Hutson, in 1981, critiqued the overmarketing in education, of pseudo-science views about hemispheric differences and other supposedly brain-related educational curricula.

- Herbert Walberg applied synthetical research review procedures to research on teacher effectiveness in his 1982 Luncheon Address. Given the commonness of meta-analytic procedures nowadays, this may not seem like much, but meta-analysis was still controversial in 1982.

- Jean Pierce introduced MWERA to electronic communication in a talk on MAEJER in 1983. It wasn't the WWW, but it was fun and produced some interesting and stimulating research discussions.

- Benjamin Bloom discussed the concept of automaticity in the development of intellectual talent in his 1985 address.

- Ken Kiewra talked about the idea of producing more independent learners in his 1990 address. This theme is echoed in all of the new curriculum standards that are appearing.

These and other wonderful addresses and many symposia and paper sessions kept MWERA membership and graduate students who attended the MWERA conference informed on the current research issues of their day. The latter reflects one of the major contributions of MWERA. By providing an inexpensive and intellectually friendly forum for sharing intellectual ideas and by encouraging participation by graduate students, I believe we have contributed to the productivity of several generations of educational researchers.

"The heart of an organization's memory is in its records. If an organization values its history, it must act to save the original letters, minutes, reports, photos, publications, and other documents that officers, members ... have produced and compiled over the years." (Society of American Archivists)

MWERA TIMELINE

PIONEERING SPIRIT OF THE SEVENTIES

1973-75 **EXPLORATION:**

Founding of a new educational research association (ERA) in the midwest is discussed informally at consecutive AERA annual conferences in New Orleans, Chicago, and Washington, D.C. Discussions focus on perceived need, merits, and potential membership.

1976-77 **LAYING THE FOUNDATION:**

The Organizational Committee is formed at the 1976 AERA annual conference in San Francisco. Follow-up meetings take place in Chicago at Loyola University and at AERA annual conferences. Outreach activities are conducted to encourage potential member interest. Quest for an official association name begins.

June 19, 1976. At planning meeting in Chicago, attendees discuss association goals and objectives, governance, finances, membership, communication, and dissemination. ... Association is temporarily named Upper Midwest Educational Research Association (UMERA).

April 1977. Four subcommittees--Constitution, Membership, Convention Program, and Convention Arrangements are formed at meeting at AERA conference in New York City.

July 23, 1977. Informal election is conducted at meeting in Chicago. Four officers are elected to serve on the Association Council pro tem: *Chairpersons* Edward Griffin and Samuel Mayo, *Secretary* Judson Harmon, and *Treasurer* Steven Colby.

1977-78 **CONSTRUCTING THE FRAMEWORK:**

Association Council Pro Tem begins more intensive planning. Council continues quest for an association name, reviews draft constitution, secures member commitments to serve as state representatives (councilors), and plans MWERA's first annual conference and formal election. Outreach activities are conducted with potential members and other educational research associations.

December 3, 1977. Council meets in Oshkosh in conjunction with the annual conference of the Wisconsin Educational Research Association. ... Constitution undergoes review process. ... Planning for MWERA's first annual conference and formal election begins.

February 18, 1978. Planning for conference and election continues at meeting at Loyola University. Members decide to hold first election at conference and subsequent elections by mail. ... Constitution review process continues.

April 1978. At AERA annual conference in Toronto, Richard Stiggins presents his paper about the founding of MWERA. ... About 25 persons visit MWERA's hospitality suite.

1978 **OPENING EVENTS:**

MWERA conducts its first annual conference and first formal election. The constitution is approved, and the quest for an official name is fulfilled. During the months which follow, MWERA obtains legal status as a not-for-profit association in Illinois, conducts a membership drive, and acquires 266 charter members.

May 12, 1978. MWERA's first annual conference, co-sponsored with the Northern Illinois Association for Educational Research, Evaluation and Development (NIAERED), is held at the Indian Lakes Country Club in Bloomingdale, Illinois. The one-day conference attracts 185 attendees. The conference, Symposium on Education, emphasizes interaction between producers and consumers of educational research.

The election is conducted at the conference, as scheduled. ... This is the only election to be held at a conference; and the election ballot is the only ballot to contain a full slate of officers. ... Elected officers include: *President* Edward Griffin, *Immediate Past President* Samuel Mayo, *President Elect* Randall Isaacson, *Vice President* Judson Harmon, *Secretary* Jean Pierce, and *Treasurer* Steven Colby. ... Constitution is approved.

Spring 1978. Charter membership is available for an annual membership fee of $5.00 during a six-week period. Afterwards, dues are increased to $7.50. ... The 266 charter members include many future MWERA officers and Councilors.

August 17, 1978. Quest for association name ends with expressed preference for Mid-Western Educational Research Association (MWERA). MWERA files its Application for Incorporation and receives official status as a not-for-profit association in Illinois.

1978-79 **THE LATE 1970S:**

1978. Three Executive Board planning meetings are held on July 28th and October 13th in Kalamazoo, Michigan, and on December 1st in Chicago. ... Major association goals are identified. ... Membership survey indicates preference for a fall conference schedule, and the transition is made by conducting two conferences the following year.

1979. MWERA's second conference, co-sponsored with the Michigan Educational Research Association (MERA), is held on March 21-23 at the Kalamazoo Center/Hilton in Kalamazoo. MWERA's third conference, co-sponsored with the Wisconsin Educational Research Association (WERA), is held on November 15-16 at the Marc Plaza Hotel in Milwaukee.

CHALLENGES OF THE EIGHTIES

OVERVIEW:

During the 80s, MWERA addresses many important organizational issues, including: location of future conferences, independent vs. joint conferences, publication of an association journal or newsletter, fluctuations in membership, optimal membership size, graduate student participation, fine tuning MWERA's bylaws to facilitate association governance, and financial support. Resolution of issues reinforces organizational stability.

1979-80 **MWERA ENTERS THE EIGHTIES:**

1979-80. Randall Isaacson serves as MWERA's second president. ... In 1979, MWERA's second and third conferences are conducted as previously reported. ... Dr. Isaacson affirms that MWERA is fulfilling its original goal of bringing together people from all areas of education to share ideas for advancing education and educational research, and recognizes major issues and dilemmas being faced in the new decade at all levels of public education. ... MWERA becomes a member of SRERA, an AERA SIG of state and regional ERAs, whose advisor is MWERA's first president, Edward Griffin.

1980-83 **THE EARLY 1980S:**

1980-81. Judson Harmon, Wisconsin Department of Public Instruction, serves as MWERA's third president. ... In 1980, MWERA's 4th annual conference is conducted independently in Toledo, Ohio on October 15-17. Two invited speakers address issues to be faced in the new decade: Frank Farley, AERA President, presents the opening address: "Prospects for the Educational Research in the 1980s and Beyond" and John Kennedy presents the luncheon address: "Training of Researchers for Education in the 1980s." Also, two training workshops are presented: "Survey Design: Theoretical to Practical" and "Sources of Funding and General Approach." ... A committee on regional research is formed following a conference session on this topic.

An ad hoc committee explores and makes recommendations concerning publication of an association journal. ... Leonard Kise and Jean Pierce, colleagues at Northern Illinois University, offer to serve and are appointed Co-editors. They publish a mini-journal, Mid-Western Educational Researcher, whose first issue is published in October 1980 on a shoe-string budget of $250. The mini-journal, is published three times a year.

1981-82. Barbara Hutson, Virginia Polytechnic Institute and State University, serves as MWERA's 4th president. ... In 1981, MWERA's 5th annual conference is conducted on November 19-21 in Des Moines at the Hotel Des Moines. The conference is co-sponsored with the Iowa Educational Research and Evaluation Association (IEREA).

In 1982, the annual, regular membership dues are increased from $7.50 to $10.00. However, graduate student dues remain the same. The dues increase is associated with rising conference and journal costs. ... Jean Pierce is elected Vice President and Roberta Starkey, Northern Illinois University, replaces her as Co-Editor of the mini-journal for one year.

1982-83. Frank Farley, University of Wisconsin, serves as MWERA's 5th president. ... In 1982, MWERA's 6th annual conference is conducted on October 14-16 in Chicago at the Midland Hotel. The conference is jointly sponsored with the Northern Illinois Association for Educational Research, Evaluation and Development (NIAERED).

1983-86 **THE MIDDLE 1980S:**

1983-84. Jean Pierce serves as MWERA's 6th president. ... In 1983, MWERA's 7th annual conference is conducted on September 29 - October 1 at the Hilton Plaza Inn in Kansas City. The conference is co-sponsored with the Psychological and Educational Researchers of Kansas (PERK). ... Robert Rosemier, Northern Illinois University, assumes the post of Co-Editor of the mini-journal and continues in that role for five consecutive years. ... Dr. Pierce launches an electronic forum for midwestern researchers. The forum, first of its kind, later comes under the sponsorship of the AERA. ... An AERA/SIG, North Central Regional Association for Community-Junior College Research (NCRA), active from 1971-1984, merges with MWERA.

1984-85. John Kennedy, The Ohio State University, serves as MWERA's 7th president. ... In 1984, MWERA's 8th annual conference is conducted on September 27-29 in Chicago at the Bismarck Hotel. ... The hotel is conveniently located and affordable, and is well received by MWERA members. MWERA continues to hold its annual conferences at the Bismarck for 11 more consecutive years, through 1995. ... A membership drive is conducted which results in more than 100 new MWERA members, some of whom who later become MWERA officers.

1985-86. Ralph Darr Jr., University of Akron, serves as MWERA's 8th president. ... MWERA's 9th annual conference is conducted in 1985 on October 17-19. ... Plans are underway to modify MWERA's governance structure by establishing "one or two" permanent positions in order to obtain greater continuity. ... Dr. Darr appoints an ad hoc publications committee consisting of three past presidents to explore different options for an official association publication.

1986-89 **THE LATE 1980S:**

1986-87. Fredric Wolf, University of Michigan Medical School, serves as MWERA's 9th president. ... In 1986, MWERA's 10th annual conference is conducted on October 16-18. The final issue of the mini-journal is published in Spring 1987. Leonard Kise and Robert Rosemier complete their terms of office as Co-editors.

1987-88. Robert Brennan, American College Testing Program (ACT), serves as MWERA's 10th president. ... In 1987, MWERA conducts its 11th annual conference on October 15-17. Sonya Blixt and Thomas Dinero, Kent State University, serve as Co-editors of the newsletter, MWERA Researcher, for a three-year term. The first issue of the newsletter is published in Spring 1988. Three issues are published annually.

An amendment replaces the elected position of Treasurer with the elected position of Member-at-Large and the appointed position of Executive Officer. ... MWERA Treasurer, Charles Anderson, becomes MWERA's first Executive Officer, and E. Peter Johnsen is elected MWERA's first Member-at-Large.

1988-89. Isadore Newman, University of Akron, serves as MWERA's 11th president. ... In 1988, MWERA conducts its 12th annual conference on October 13-15. ... The Wisconsin Educational Research Association (WERA) merges with MWERA.

OVERVIEW:

Many organizational changes occur during the early part of this decade, including: calendar change in term of office; new association journal which replaces the newsletter; support by a 12-member editorial advisory board; publisher exhibits at annual conference; Lifetime membership; and launching of historical study.

1989-90

MWERA ENTERS THE NINETIES:

1989-90. Dennis Leitner, Southern Illinois University, serves as MWERA's 12th president. ... In 1989, MWERA's 13th annual conference is conducted on October 19-21. ... Dr. Leitner overviews MWERA's previous three years and observes tremendous growth in conference program quality, official publications, and active membership involving more graduate students. He foresees a new official publication, awards/scholarships/honors for graduate students and a history of MWERA. ... An amendment is passed which modifies MWERA's divisions to correspond with those of AERA.

1990-91

THE EARLY 1990S:

1990-91. Ayres D'Costa, The Ohio State University, serves as MWERA's 13th president. ... In 1990, MWERA's 14th annual conference is conducted on October 17-20. ... An amendment is passed which adjusts the dates of the term of office from "September 1 through August 31 of the following year" to "closing of the annual conference through the close of the next annual conference." Thus, Dr. D'Costa is also president during MWERA's 15th annual conference which is conducted in 1991 on October 16-19. ... Isadore Newman and Gregory Marchant are appointed Co-editors of the new association journal, Mid-Western Educational Researcher, for a three-year term, from 1991 through 1993. Three journals are published each year, and an additional conference program issue is prepared by the Vice-President/Program Chair. ... First issue of the new journal is published in Winter 1991.

1991-92. Barbara Plake, University of Nebraska-Lincoln, serves as MWERA's 14th president. ... In 1992, MWERA's 16th annual conference is conducted on October 14-17. ... MWERA's annual, regular membership dues are increased to $18.00, but graduate student dues remain unchanged. ... A MWERA Lifetime Membership category is established with dues at 10 times the annual, regular membership dues.

1992-93. Kenneth Kiewra, University of Nebraska-Lincoln, serves as MWERA's 15th president. ... In 1993, MWERA's 17th annual conference is conducted on October 13-16. Nearly 100 different institutions are represented by presenters at the conference. The new team of journal editors selected to serve from 1994 through 1996, include Editor Ayres D'Costa and Associate Editors Susan Brookhart and John Surber. First issue of new journal is published in Winter 1994.

1993-94. Richard Pugh, Indiana University, serves as MWERA's 16th president. ... In 1994, MWERA's 18th annual conference is conducted on October 12-15. ... Dr. Pugh gets the historical study of MWERA underway with preparation of RFP, appointment of review committee, and proposal acceptance. ... Charles Anderson completes his term of office as Executive Officer, and Dr. Pierce accepts three-year appointment as MWERA's next Executive Officer. □

For inferential statistics, the chi-square significance test for the quotient of two proportions is the same test as the significance test for their difference (the null hypothesis of a quotient of 1 is conceptually equivalent to a null hypothesis of a difference of 0), whereas the interval estimation formulas for the quotient, and for the "odds ratio" approximation to that quotient, are considerably more complicated (see Fleiss, 1981, pp. 71-75 and Bedrick, 1987).

Independence of observations

Since all of the inferential procedures for proportions and for their differences and quotients are based on the binomial sampling distribution for independent "trials", it is essential to consider that assumption when applying such procedures to real data. Researchers (e.g., Chase, 1996; Feldt, 1996) who use hypothesis testing in conjunction with criterion-referenced measurement, in order to test a sample proportion of correct answers against a hypothesized "cut-off" proportion necessary for "passing" an examination, are in an especially vulnerable situation. Here the inference is for a single person being measured on a sample of n items that usually correlate with one another, not for n persons being measured on a single item. In using the normal approximation to the binomial to test the null hypothesis that a person below the cutting point is actually a "passer" such researchers are apparently appealing, consciously or unconsciously, to the assumption of local independence that is made in conjunction with item response theory.

Summary

Proportions come up fairly often in educational research. (So, of course, do their corresponding percentages—just multiply by 100 and add a % sign). They are allegedly simple to use and to interpret. But as we have tried to point out in this article, they are subject to all sorts of statistical problems, some more serious than others. The following cautions need to be observed when employing inferential statistics for proportions:

1. Always use the appropriate p or p's in the formula for the standard error, even when that formula is an approximation.
2. Be prepared to face up to very complicated formulas for the appropriate standard errors for interval estimation.
3. When applying these procedures to unconventional inferential situations such as criterion-referenced measurement, be aware that the assumption of independent observations may be violated. In order to test that assumption, we suggest that the interested researcher follow Lord's (1980, p. 21) recommendation for testing the assumption of unidimensionality (from which local independence follows): Compare the first three eigenvalues of the inter-item tetrachoric correlation matrix. If the largest eigenvalue is much higher than the second largest and the second largest is not much different from the third largest, local independence can be assumed.

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Examining What Should Be the Role of an "Internationalized" Land Grant Extension System

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Abstract

The purpose of the study was to identify the characteristics that will describe an internationalized state extension system. The study used a modified Delphi technique to explore and describe the characteristics of an internationalized state extension system. By consensus of the Delphi Panel, five critical elements were identified. Extension systems can use these as criteria to make initial assessments on the level of internationalization present.

"America's future rests on its ability to understand and compete in a world which year by year moves rapidly toward economic, political and social interdependence."
Ping (1990, p. 27)

Introduction

Extension has existed in the U.S. as part of the Land-Grant College system since 1914. Over time the mission and focus of Extension has changed from outreach education from the university targeted toward agricultural producers to include a broader social orientation. An increased interest in internationalization of Extension has occurred (Henson, Noel, Gillrad-Byers & Ingle, 1990; Ingle & Gage, 1990; Somersan, 1992). This interest appeared to be a result of many factors and influences, both within and outside Extension and the university. *America 2000* targeted the need for an educated citizenry who have the knowledge and skills to compete in a global economy. The report stated "all our people, not just a few, must be able to think for a living, adapt to changing environments, and to understand the world around them". (U.S. Department of Education, 1990, p. 35).

A review of literature indicated that internationalization is frequently viewed in general, rather amorphous terms that are difficult for some to understand and comprehend (Henson, Noel, Gillrad-Byers & Ingle, 1990). Arum and Van de Water (1992), in their book *Bridges to the Future: Strategies for Internationalizing Higher Education*, supported this view. In article after article, report after report, and at conference after conference the terms used to characterize the international dimension of education vary tremendously.

Purpose

The purpose of the study was to identify the characteristics of an internationalized state university Extension system.

Broad, but often ambiguous, goal statements are frequently used related to internationalization of Extension (ES-USDA, 1989; Ingle, 1990; King & Martin, 1991). Some ideas have been formulated for internationalizing (ES-USDA, 1989; Henson, Noel Gillrad-Byers & Ingle, 1991; Knox, 1987; Patton, 1984; Somersan, 1992; York, 1984), but there has been little emphasis on implementation by Extension systems across the country (Andrew & Lambur, 1986; Poston & O'Rourke, 1991; Rosson & Sanders, 1991). Few studies have been conducted related to internationalization of the Extension component of the land-grant university system. None defined internationalizing in terms of objectively verifiable indicators of success. A need to examine and improve the understanding of internationalizing of a state university Extension system became apparent through a review of literature. If the characteristics of an internationalized Extension system could be identified, then an organization might focus available resources to create changes needed to achieve internationalization.

Kaufman (1982, 1992) suggested putting problems into the context of what is and what should be when dealing with organizations. The Organizational Elements Model (OEM) developed by Kaufman (1982, 1992) provided a framework for the study. Kaufman's model used a holistic framework in looking at organizations and what those organizations use, do and deliver as well as the impact on clients and society in general. The current study was limited to examining organizational efforts and organizational results.

Methodology

The study used a three-round, modified Delphi technique to explore and describe the characteristics of an internationalized state Extension system. Delphi, a group process, utilized individual written responses to three researcher developed instruments as opposed to bringing individuals together for oral discussion. The process was further characterized by multiple iterations or feedback designed to accomplish convergence of opinion. Participants' anonymity was maintained during the three rounds of the study.

Linstone and Turoff (1975) outlined situations where the use of the Delphi was indicated. Situations included: (1) pre-

cise analytical methods were not suitable for studying the problem, but subjective judgment on a collective basis could provide beneficial information relative to the problem; (2) time and cost limited the ability to convene group meetings involving the individuals needed to address the problem; (3) the individuals needed to contribute to examination of a broad and complex problem represented different backgrounds with respect to experience or expertise; (4) anonymity assured that disagreements among individuals which might result in a face-to-face interaction could be referred; and (5) domination by a group or individual was avoided. All of these situations were evident in the problem to be addressed.

Panel Selection

The Delphi Panel members were purposefully selected following a nomination process. An accessible population was identified following a review of authors of significant publications, solicitations of nominations during consultations with professional leaders in the field, and personal knowledge of outstanding contributions made. A review panel consisting of three faculty members with extensive knowledge of the topic was used to assist the researcher in the selection process. A total of 15 individuals, well known and respected for their contributions to Extension or land-grant colleges or universities in the area of internationalization, was identified. The participants selected by the review panel met at least three of the criteria established for selection. The criteria were: (1) national/international reputation; (2) familiarity with the topic; (3) has conducted research, written or lectured on the topic; (4) was considered to have a deep interest in the problem and important knowledge or experience to share.

Instrument Development and Data Collection

Specialized instruments were developed following a review of the literature to clarify the concepts being studied and suitability of the modified Delphi research technique to assess these concepts. In the modified Delphi, position statements were used in place of an unstructured questionnaire on the first round. Three rounds were planned and three instruments were developed. The development and administration of questionnaires is interconnected in the Delphi technique.

Instrument Development

The initial instrument contained 39 position statements derived from the literature and structured interviews with international experts. Face and content validity of the initial instrument were assured through the use of a content validity panel. The reviewers, six faculty from universities in the U.S., Europe and Africa who were familiar with the U.S. Extension system were advised of the objectives of the study and the purpose of the instrument. Each was asked to review and refine the alternatives stated and identify additional important positions pertaining to the study. Comments and suggestions related to clarity and content were solicited. Given the nature of the Delphi technique, additional types of validity and reliability estimates were not appropriate for the instrument (Dalkey, Rourke, Lewis and Snyder, 1972; Hughes, 1993).

The Delphi Panel was asked to identify the degree to which they believed each item on the instrument contributed to the internationalization of a state university Extension system. A seven-point Likert-type scale was used with 0 indicating "no importance" and 6 indicating "critical importance". Delphi Panel members were asked to support their opinion with a rationale. Space was also provided for panel members to add new statements. Delphi Panel responses were incorporated in successive instruments.

Instrument II was developed based on responses to the first instrument and suggestions for new statements made by the Delphi Panel. During Round I, consensus was not achieved on any statement based on the criteria established. Consensus on a statement was considered to have been reached when 80% of the ratings (12 panel members) fell within two rating categories on a seven-point scale (Ulschak, 1983). The instrument used in Round II repeated the 39 items from Round I. Based on suggestions from the Delphi Panel, 12 new items were added and 9 items were reworded so that a total of 51 items were considered.

Two types of feedback were provided the Delphi Panel in Instrument II. The first was statistical feedback in the form of group response using a frequency table for each statement and the individual's own response on each statement. Neither the mean nor median was reported as a descriptive statistic. The dispersion of scores indicated these statistics could be misleading to the Delphi Panel. In addition to statistical feedback, all comments by the Delphi Panel for each statement in Round I were anonymously reported. The instruments used in the second and third rounds contained items on which a predetermined level of consensus was not achieved during the previous round. Consensus was achieved on nine items during the second round.

Instrument III was developed based on responses to the Round II instrument and suggestions made by the Delphi Panel. The round III instrument contained 42 items on which consensus was not achieved in Round II. Two types of feedback were used in Round III. The first was statistical feedback in the form of group response using a frequency table for each statement and the individual's own response on each statement. The mode was identified as well. In addition to statistical feedback, all comments by the Delphi Panel for each statement in Round II were anonymously reported. In Round III, the Delphi Panel was asked to review each statement, re-evaluate their position and rerate using the same seven point Likert-type scale. During Round III, consensus was reached on 29 items.

Data Collection

The Delphi instruments were mailed to the Delphi Panel using regular U.S. mail or air mail to international locations. The mailed packet consisted of the instrument, an individually addressed cover letter and a self-addressed stamped return envelope. A variety of techniques was used to ensure maintenance of interest and participation in the study.

Table 1

Characteristics Having Importance to Extension Internationalization

Item	Mean	SD	Category
Clientele develop a fundamental understanding of global and national interdependence.	5.85	.38	R
Extension educational programs within in the U.S. stress the impact of international economic forces on agricultural markets.	5.69	.86	R
Extension educators incorporate international perspectives into on-going educational activities.	5.54	.66	R
Extension faculty/agents recognize the relationships between basic international issues (e.g. knowledge of international agriculture, commitment to human development, significance of privatization)and the Extension mission.	5.54	.66	E
Personnel evaluation systems recognize international efforts.	5.50	.76	E
Key leaders participate in interdisciplinary international experiences.	5.36	.74	R
Sensitivity to diversity issues by Extension clientele is enhanced.	5.36	.63	R
Reward structure recognizes internationalization in its system of rewards. These include merit adjustments, tenure, promotion, and peer recognition.	5.31	.63	E
Financial support for internationalizing activities is available.	5.21	.43	E
Administrators clearly communicate support for internationalization.	5.14	.66	E
A person(s) is identified to provide leadership to internationalizing efforts.	5.14	.53	E
International experiences are provided for county agents who do not have faculty status.	5.08	.64	E
Policy and operating procedures facilitate international program efforts.	5.07	.62	E
The organization culture expects international activity.	5.07	.62	E
Extension educators assist communities in building a sense of responsibility for wise use of natural resources in the context of global trends.	5.07	.62	R
Faculty increase their expertise by interacting with faculty and scholars from other cultures.	5.07	.47	E
Human and physical resources are allocated to support the integration of international activities in the overall institution effort.	5.07	.47	E
Opportunities for international experiences are provided for administrators.	5.00	.55	E
The central mission of the Extension system includes a commitment to international education.	5.00	.55	E
Professional improvement activities increase activities increase knowledge of global issues.	4.93	.47	E
Extension is involved with international development activities.	4.93	.92	E
Local business persons are trained for participation in international markets.	4.93	.62	R
Specific groups (i.e. commodity groups) are targeted for public policy education on global decision-making.	4.86	.66	R
The organization's best junior faculty/agents are identified to participate in overseas assignments.	4.86	.36	E
Administrators engage in experience which will internationalize their own professional lives.	4.86	.53	E
Regular encouragement/accommodation of visitation by scholars from other countries occurs.	4.86	.66	E
Proposals for international work are developed and funded.	4.77	.44	E
The organization's best senior faculty/agents are identified to participate in overseas assignments.	4.64	.63	E
Exchange programs with extension organizations in other countries are institutionalized.	4.64	.74	E
Rural clientele are targeted for educational programming related to the current international marketplace.	4.64	.74	R
Educational programs planned by Extension help clientele secure a better understanding of complex worldwide issues.	4.57	.76	R
Extension educational programs offered to 4-H members help develop international awareness.	4.57	.76	R
Educational programs increase participant's understanding of other cultures.	4.57	.76	R
A committee(s) is established to guide internationalization efforts.	4.57	.65	E
Exchange programs with extension organizations in other countries are planned and conducted on an on-going basis.	4.50	.65	E
Training programs are provided for foreign immigrants living in the United States.	4.50	.52	R
Urban clientele are targeted for educational programming related to the current international marketplace.	4.50	.65	R
Extension clientele interact with visiting scholars and students to become more globally aware.	4.31	.75	R

Scale: 0 = No Importance; 1 = Slight Importance; 2 = Limited Importance; 3 = Moderate Importance; 4 = Moderately High Importance; 5 = High Importance; 6 = Critical Importance

Categories: E = Organizational Effort; R = Organizational Result

Note: Round 1: N = 14; Round 2: N = 13; Round 3: N = 14

Data Analysis

Descriptive statistics were calculated for each round. The computer program SPSS was used for data analysis. For each round, items on which consensus was reached were identified. Consensus on an item was considered to have been reached when 80% of the ratings fell within two categories on a seven-point scale.

Frequency counts and percentages, along with the mode and median were reviewed in determining consensus. For each round, those items not meeting the criteria for consensus were included in the following round as well as new items generated from suggestions. Suggested items were compiled and content analysis was conducted following procedures outlined by Altschuld (1993) and Delbecq, Van de Ven & Gustafson (1975). Following Round III, statistics of central tendency and variability were calculated for all items on which consensus had been reached. The mean was used to describe the level of importance of the item to an internationalized state Extension system as determined by consensus of the Delphi Panel and variability was described through standard deviations.

Results

The results of the study represent the collective opinion of the experts participating in the Delphi Panel at a single point in time and cannot be construed to be representative of any other population or situation. Fourteen of the 15 participants responded to each round, a 93% response rate. Fifty-one items were considered during the three rounds of the Delphi. Consensus was achieved on 38 items which were identified as having moderately high importance to critical importance for the internationalization of a state university Extension system. Table 1 reports the items where consensus was reached. Consensus was not achieved on thirteen items after three rounds. Comments made by the Delphi Panel during each round and reported anonymously provided additional information to describe the ratings and clarify issues. Three hundred and sixteen comments were received.

Following Kaufman's model (1982, 1992), the results were categorized as Organizational Efforts and Organizational Results. Organizational efforts were comprised of inputs and processes. Inputs were identified as the existing starting conditions affecting organizational activities and processes as the means, methods and procedures necessary for managing inputs. Organizational results were comprised of products and outputs. Products were defined as the internal results accomplished through the application of inputs and processes; outputs were the products the organization delivered to external clients.

By consensus of the Delphi Panel, the most critical characteristic of a state university extension system which had internationalized was the output or end product of clientele who developed a fundamental understanding of global and national interdependence. Educational programming efforts having high importance to internationalization included programs that help clientele understand complex worldwide issues, programs that train local business persons for participation in international markets and interdisciplinary international experiences for key leaders. The Delphi Panel placed high importance on targeting commodity groups for public policy education on global decision making and rural clientele for education on the international marketplace.

Critical Elements

Five critical elements were identified by the Delphi Panel as being present in an internationalized state university Extension system:

- Clientele develop a fundamental understanding of global and national interdependence.
- Extension educational programs within the U.S. stress the impact of international economic forces on agricultural markets.
- Extension educators incorporate international perspectives into on-going activities.
- Extension faculty/agents recognize the relationship between basic international issues and the Extension mission.
- Personnel evaluation systems recognize international efforts.

The absence of any one of these critical elements would mean that the Extension system could not be considered to be internationalized. An internationalized state university Extension system would exhibit other important characteristics as described in Table 1. Not all the important characteristics identified by the Delphi Panel need to be present for the Extension system to be considered to be internationalized, but many are likely to be evident. Each important characteristic provides a building block, process or programming goal which will enable the Extension system to develop and maintain the five critical elements identified.

Conclusions and Implications

The study brought greater clarity and focus to the definition of internationalization of an Extension system. Internationalization was not seen as a fourth dimension: teaching, research, service and international efforts. Instead, successful internationalization efforts were identified as integrating global perspectives into the basic mission and mandate of Extension. Using the definition of university internationalization developed by Henson and Noel (1989) as a starting point, a three-part definition is proposed for discussion and debate. The definition is based on results of the current study and reflects the five critical elements identified.

> Internationalization of Extension is the incorporation of international dimensions, content and considerations into Extension teaching, research, and service to enhance their relevance in an increasingly interdependent world.

1178

Participation in Extension educational activities assist clientele to develop a fundamental understanding of global interdependence and international economic forces as they relate to the issue areas within Extension's mission.

Institutional commitment is evidenced by the development of a structure and capacity to support staff development and reward accomplishments.

Poston and O'Rourke (1991) reported 80% of Extension directors indicated their state had achieved either a low level or had not achieved any level of globalization. For these Extension systems, internationalization will represent a significant organizational change. Identification of characteristics essential to an internationalized Extension system can assist Extension leaders and university administrators to identify and focus available resources where the greatest impact or change can be realized. A clear sense of direction, strong leadership in internationalizing and enthusiasm from leaders of the organization will help to ensure concerted and sustained action. Policy and resource decisions such as the incorporation of fiscal support into the ongoing Extension budget and placing a person "in charge" of internationalization to support and coordinate Extension program and activities are necessary implementation strategies. Assessment must focus on the outcomes achieved. Organizational change is a slow and often discontinuous process in a complex organization. Ongoing assessment of the progress being made will be necessary.

One outcome of the current study was the generation of additional questions and avenues for research. Research in the area of internationalization of Extension has been limited and it is hoped that the results of the current study have raised additional questions. Suggestions for further study are illustrative of the types of problems yet to be addressed. Replication of the current study is suggested. Other issues to be explored include: Can the factor(s) which stimulated an uninvolved Extension system to change and begin the process of becoming internationalized be identified? What are the societal impacts of an internationalized state Extension system? What characteristics do state Extension systems have which by reputation are considered internationalized exhibit? How do these characteristics compare with the five identified by the current study?

In closing, a comment made by one of the Delphi Panel members is appropriate. The panel member indicated "Internationalization should not be viewed as a fourth dimension: teaching, research, service and international. Instead successful internationalization efforts will integrate global perspectives into the basic mission and mandate of Extension".

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1180

Research Alive

Mentoring: Help or Hindrance?

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The research literature shows mentoring programs in education to be highly complex and situational. While there are potential advantages for both the mentor and the novice teacher, several issues remain problematic and presently limit the effective, widespread use of mentoring as a way of inducting new teachers into the profession.

When we finished our preservice teacher education programs, we were awarded teaching certificates and were thought to be competent in all classroom endeavors, including teaching, discipline, and establishing classroom climate and environment. We had only one field experience, our student teaching. After securing a teaching position, we entered the classroom excited yet apprehensive. Noone was assigned to help us cope with any ensuing problems or to help us with school policies and procedures. Luckily, we attached ourselves to experienced teachers who were kind enough to help us muddle through our first year of teaching.

Not everyone is so lucky, though. Linda Darling-Hammond noted in a recent issue of *Kappan* (1996) that the lack of effective mentoring is one of the barriers to having competent teachers for every child. She suggested that teachers "... who do get hired are typically given the most difficult assignments and left to sink or swim, without the kind of help provided by internships and residencies in other professions. Isolated behind classroom doors with little feedback or help, as many as 30% leave in the first few years, while others learn merely to cope rather than to teach well" (p. 195). Rosenholtz (1989) and Veeman (1984) support Darling-Hammond's assessment regarding the astoundingly high attrition rate of beginning teachers after just a few years of service. Whether beginning teachers experience frustration and difficulty in the profession because they are expected to be responsible for the same work that experienced veterans do (Lortie, 1975), or because they are frequently given the most difficult or undesirable teaching situations, educators from across the country have responded by initiating teacher mentoring programs.

In recent years, we have worked with public school systems and their mentoring programs for beginning teachers. From our discussions, there appear to be wide latitudes regarding the processes and procedures in developing and maintaining mentors and mentoring programs. Our observations are verified by the National Association of State Directors of Teacher Education (NASDTEC) who notes variance in programs across states. Mentoring programs, or "Beginning Teacher Support Systems" (BTSS) as they are referred to by NASDTEC, are described in the 1996-1997 *NASDTEC Manual.* Currently, it is noted that only 28 states have BTSS programs and of those, just over half (15) have all of their beginning teachers involved in the programs. Most include some type of training and/or inservice programs for beginning teachers (20), but only 16 states provide additional funding for the BTSS programs. The elements of each state program vary widely with regard to: (a) criteria and processes for selection to the BTSS, (b) criteria and processes for the selections of mentors, (c) policies regarding evaluation of the BTSS, (d) policies regarding second year support, and (d) funding of the BTSS. Further, the report notes that only eight states require support for beginning teachers by the teacher education institutions.

The original mentor is found in the classic poem *The Odyssey* by Homer. When Odysseus leaves to fight in the Trojan Wars, he entrusts his son, Telemachus, to an old and dear friend named Mentor. Mentor was to nurture and educate Telemachus during Odysseus's absence. Telemachus was to respect Mentor. Therefore, a mutual relationship developed where an older, experienced individual helped a younger novice to develop and grow. From this Greek myth, the process of helping entry persons into a profession by utilizing more experienced and valued employees has been labeled "mentoring." The established programs are based on the premise that a positive emotional attachment exists between two individuals. The older or more experienced persons share their wisdom and insights, while the younger or novice individuals value such knowledge and learn from it. Business and government introduced mentoring in their worlds beginning in the 1970s. Schools, colleges and universities, and states developed mentoring programs in the 1980s in an attempt to help acclimate new teachers nationwide (Gold, 1996; Tellez, 1992).

The literature reviewed for this article was very perplexing and compounding. One thing is clear. There is wide variance in how the term mentoring is used and in the programs described. Its implementation appears to be highly dependent upon the leadership of the organization, the interest generated, and available funds. There are numerous articles that described in detail how the various programs use mentors, including selection and training. The literature was much more limited, however, regarding how mentors or mentoring programs significantly improved an individual's performance.

The Impact of Mentors

The limited research available does indicate mentoring generally has a positive impact on both mentor and protégé. Kram (1983), in her study of 18 business mentoring relationships, concluded these relationships can enhance a novice's develop-

ment. The phases of development she identified were similar to those of Fuller and Bown (1975) or others. They included initiation, cultivation, separation, and redefinition. She also found the positive impact was influenced by the individuals and the type of interpersonal relationship that ultimately developed. Kram did note, however, that under certain circumstances, the mentoring relationship could become destructive for one or both individuals. Head, Reiman, and Thies-Sprinthall (1992) concur, warning that in facilitating the professional growth and development of teachers inadequate or nominal mentoring programs may actually be worse than no program at all. It appears, therefore, that mentoring programs can have either positive or negative effects.

In recent years, mentoring research has focused on educational inductees at various levels. For example, individuals in higher education who have been involved in a mentoring program learned political skills, risk-taking behaviors, and communication skills viewed as important to their profession. Researchers concluded that mentoring relationships were critical for developing quality professionals in higher education (Bova & Phillips, 1984). Ganser (1994) reported that principals in public school systems viewed mentors as a helpful supplement to their staffs. They also wanted to be involved in selecting the mentors who worked with beginning teachers.

The primary focus of the research literature, however, has been beginning teachers. Bainer and Didham (1994) reported that mentoring was viewed as an important dimension of support in education. Some research indicates that beginning teachers involved in mentoring programs engage in more conversations regarding teaching than beginning teachers who do not have mentors. Additionally, they are more likely to engage in action research and are more willing to work in collaborative contexts for teacher learning (Stanulis & Jeffers, 1995). Teachers who are involved in mentoring programs were identified as more collaborative in both professional and social context (Powell & Mills, 1995).

Ballantyne, Hansford, and Packer (1995) reported that beginning teacher and mentor journals revealed four major functions of mentoring, including: (a) personnel support, (b) task-related assistance and advice, (c) problem-related assistance and advice, and (d) critical reflection and feedback on practice. In their analysis of mentor teacher component of the North Carolina Beginning Teacher Program, Huffman and Leak (1986) concluded that "Mentor teachers...provided 'positive reinforcement', 'guidance and moral support', 'patience and understanding' and even a 'shoulder to cry on'"(p. 23).

Personal and emotional support is valued by beginning teachers, but mentors also gain a great deal of personal satisfaction from the relationship. Beginning teachers reported that the most important aspect of an induction program was having a mentor because it gave them someone to turn to when problems arose (Huling-Austin, Putman, & Galvez-Hjornevik, 1986). Researchers link the aspect of "mentor satisfaction" to the generativity stage in adult development based on Erikson's theory (Stevens, 1995). Findings from a qualitative study confirm the importance of mutual respect and trust necessary for a successful mentoring relationship (Abell, 1995).

Especially in the early weeks of teaching, beginning teachers value the advice, resources, and ideas that a mentor shares, information about school routines and curriculum content, assessment and evaluation of students, and innumerable other issues and concerns (Ballantyne et al., 1995). It also has been reported that both the curriculum content and instructional methods are significantly influenced by mentors (Harnish, 1994; McNamara, 1995). Beginning teachers reported receiving help from their mentors in 14 areas, according to Huling-Austin and Murphy (1987). Among the most mentioned were: someone to talk to/listen to, locating materials, help with clerical work related to district policies and procedures, lesson planning, classroom organization, and discipline (p. 33). Wilkinsons' 1994 survey of 286 first year teachers found that beginning teachers reported assistance with classroom procedures, lesson planning, teaching strategies and methods, and discipline as most helpful to them. Wilkinson also noted that when the teaching situation was more challenging, the beginning teachers wanted more assistance.

An appropriate time for mentoring to begin to focus on critical reflection and feedback on practice is during the later stages of a beginning teacher's first year (Ballantyne et al., 1995). They note that during the second term, most beginning teachers report growing confidence in task- and problem-related areas. This "naturally occurring shift in focus" (p. 302) is from teaching-centered concerns to student-learning concerns and a willingness to take risks regarding teaching strategies and styles.

Problems in Paradise

While research suggests many benefits of mentoring, many individuals continue to express concerns regarding mentors and mentoring. Areas of concern include the lack of definition of mentoring and mentors, the amount and type of training necessary for mentors, and what characteristics mentors need to be successful.

One of the biggest concerns regarding mentors and mentoring is the wide latitude given to how individuals define the two terms. If we are to utilize Homer's guide, many of the current programs implemented do not fit the term of mentor. Often what we see is one individual labeled as a "mentor", when actually they serve as a resource person or "buddy" for new teachers. This occurs when a school or district identifies one teacher to serve as mentor to all beginning teachers in a particular school building. This role, although formally established, has no allocated time for implementation. Therefore, information regarding policies and procedures is relayed, but no personal relationships are established. True mentoring takes time and effort. It is virtually impossible for an individual with his/her own classroom duties to find the time to establish personal relationships with several beginning teachers. Other school mentoring programs pair one experienced teacher with a novice during the induction year. Again, the teachers may or may not have common planning times where a relationship could be established. These are just two mentor program configurations. However, there are as many configurations along the spectrum between these two models as there are institutions or people who develop such programs. Perhaps this is why several definitions for mentor and mentoring are found (e.g. Gehrke & Kay, 1984; Kay, 1990; Little, Galagaran, & O'Neal, 1984).

Healy and Welchert (1990) believe a common definition must be established because "without such definitional consensus, efforts to develop a knowledge base relevant to mentorships in education has been haphazard" (p. 17).

Another issue is the amount or absence of training given to mentors. Some school districts have elaborate systems developed for the selection and preparation of mentors. At the other extreme, some do nothing beyond identifying the mentor. Training is an important aspect of any mentoring program. O'Dell (1987) emphasizes that mentor training should be based on the literature about teacher development, beginning teacher problems, effective teaching, supervision, and adult development. Research supports this, as beginning teacher concerns were the area most handled by mentors (Wilkinson, 1994). Kilgore and Kozisek (1988) concluded from their studies that when mentors received no training or compensation, their role was not fulfilled.

Hart (1985) found that teacher mentors were most successful as supervisors when they were trained in supervision. Research indicates that the role of mentoring is difficult to perform and that teachers want more time and specific training before they are comfortable with and competent in that role (Ganser, 1995; Hawley, 1990; Warren-Little, 1988). Thies-Sprinthall (1986) is adamant in her belief that mentor training and follow-up activities are critical to the success of the mentoring program. In a preliminary study, Giebelhaus and Bowman (1997) found that preservice teachers who worked with trained mentor teachers exhibited stronger skills in planning and demonstrated greater reflective and analytical skills about teaching and learning than did those student teachers whose cooperating teachers had no mentor training. Further, they found that although mentor training which included general principles and strategies of supervision produced good results, even better results occurred when the training was coupled with knowledge of and skill in recognizing specific effective pedagogical practices.

Kennedy (1991) describes one program which she found to be highly successful with more than 700 teachers and teacher candidates. Components of this mentoring program included: (a) mentor teachers being temporarily released from their full-time teaching load, (b) mentors received training in the task of mentoring and on-going assistance afterwards to discuss the challenges of mentoring, and (c) preparation and assistance focuses on the goals and purposes of teaching, on academic content, and on how to critically analyze teaching.

Wilson and Ireton (1995-1996) studied the competencies which a master or mentor teacher should possess in order to model, guide, and assist a beginning teacher. Eleven competencies viewed as important to fulfilling the role of mentoring a beginning teacher were identified by mentor teachers. Of the eleven competencies ranked, classroom management was identified as the most important. Other competencies necessary for effective mentor teachers included good communication skills, ability to respond to individual differences, ability to maintain a "close day to day liaison" with the beginning teacher, enthusiasm, willingness to accept constructive criticism, and ability to provide positive feedback. Personal characteristics necessary for successful mentoring relationships are also noted in the literature. In their list of essential mentor characteristics, Butler (1987) and O'Dell (1987) included the following: (a) successful teaching experience, (b) willingness to commit time, (c) ability to redefine roles as the other teacher grows and develops, and (d) responsiveness. Huling-Austin, Putman, and Galvez-Hjornevik (1986) stated that "The assignment of an appropriate support teacher is likely to be the most powerful and cost-effective intervention in an induction program" (p. 50). More recently, Fletcher (1995) indicates that mentors must have the ability to work as a partner in a shared learning process with another adult. Ballantyne et al. (1995) found mentor teachers who did not have the knowledge of progressive teaching methods or the ability to aid their protégé in critical reflection were not successful in their role. Therefore, attention must be given to the characteristics and selection of mentors.

The Bottom Line

Effective mentoring is highly complex. This is evidenced by the mentoring principles developed and adapted by the Association of Teacher Educators in 1991 (Bey & Holmes, 1992). Three areas are identified and elaborated. These are: the actual mentoring process, the establishment and maintenance of mentoring programs, and the selection and preparation of mentors. Research indicates that there are potential benefits for both individuals involved in a mentoring relationship. However, many issues remain problematic. Many of these problems deal with the definition of mentoring, the role of the mentors, and the selection of the mentors. Schools report that they are unsure about how to resolve these problems (Bradley & Gordon, 1994). If these are the biggest issues in the mentoring process, it is not surprising that schools cannot solve them alone. There appears, however, to be tremendous potential in inducting novices into the teaching profession by using mentors. By working together teacher education institutions and school districts may be able to make mentoring the best possible opportunity for "passing the torch to the next generation of teachers" (Head et al., 1992, p. 5) and realizing America's goal of providing "all students with what should be their educational birthright: access to competent, caring and qualified teachers" (National Commission on Teaching and America's Future, as cited in Darling-Hammond, 1996).

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Index of Authors: 1997

The Index of Authors and the Index of Articles are alphabetical listings of MWER articles from 1997 indicating the issues where they can be found. Abstracts for these articles can be found on the MWERA Website, http://www.acs.ohio-state.edu/units/education/mwera/contents.htm.

M. Kay Alderman, University of Akron
Explorations of Preservice Teachers' Learning Strategy Use, Volume 10, No. 2, Spring 1997

Charles C. Anderson, Jr., MWERA Executive Officer (Ret.)
MWERA: Promise and Fulfillment (Special Supplement), Volume 10, No. 4, Fall 1997

Thomas Andre, Iowa State University
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Fulfilling Its Promise, a Content Analysis of 20 Years of Research at MWERA, Volume 10, No. 1, Winter 1997

Deborah L. Bainer, The Ohio State University, Mansfield
Voices from the Past, Volume 10, No. 1, Winter 1997

R. Kirby Barrick, University of Illinois at Urbana-Champaign
Examining What Should Be the Role of an "Internationalized" Land Grant Extension System, Volume 10, No. 4, Fall 1997

Mary Bendixon-Noe, The Ohio State University, Newark
Mentoring: Help or Hindrance? (Research Alive), Volume 10, No. 4, Fall 1997

Susan M. Brookhart, Duquesne University
A Field-Based Introduction to Urban Education at the Middle School, Volume 10, No. 2, Spring 1997

Josue Cruz, University of South Florida
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Mary M. Kennedy, Michigan State University
How Teachers Connect Research and Practice, Volume 10, No. 1, Winter 1997

Thomas R. Knapp, The Ohio State University, Columbus
Some Cautions Concerning Inferences about Proportions, Differences Between Proportions, and Quotients of Proportions, Volume 10, No. 4, Fall 1997

Laura Lipsett, The Ohio State University, Columbus
Problems Related to Participants' Roles and Programmatic Goals in Student Teaching Supervision, Volume 10, No. 4, Fall 1997

Barbara G. Ludwig, Ohio State University Extension
Examining What Should Be the Role of an "Internationalized" Land Grant Extension System, Volume 10, No. 4, Fall 1997

Gregory J. Marchant, Ball State University
Top 10 Issues Facing Teacher Education, Volume 10, No. 1, Winter 1997

Ronald N. Marso, Bowling Green State University
Effectiveness Testing Practices, Volume 10, No. 1, Winter 1997

Sharon McNeely, MWERA President
Schedules and Plans and Things You Should Know, Volume 10, No. 1, Winter 1997

Fred L. Pigge, Bowling Green State University
Effectiveness Testing Practices, Volume 10, No. 1, Winter 1997

Hema Ramanathan, Butler University
Problems Related to Participants' Roles and Programmatic Goals in Student Teaching Supervision, Volume 10, No. 4, Fall 1997

Richard J. Reynolds, Connecticut State University
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Doug Smith, Coastal Carolina University
Problems Related to Participants' Roles and Programmatic Goals in Student Teaching Supervision, Volume 10, No. 4, Fall 1997

Theresa Strand, MWERA Archivist/Historian
MWERA: Promise and Fulfillment (Special Supplement), Volume 10, No. 4, Fall 1997

Mary R. Sudzina, University of Dayton
From Tourists to Citizens in the Classroom: An Interview with H. Jerome Freiberg (Conversations in Education), Volume 10, No. 2, Spring 1997

Hak P. Tam, National Taiwan Normal University
Some Cautions Concerning Inferences about Proportions, Differences Between Proportions, and Quotients of Proportions, Volume 10, No. 4, Fall 1997

Joseph Watras, University of Dayton
Dismantling Desegregation (Book Review), Volume 10, No. 2, Spring 1997

Loretta Wilkinson, Northeast Ohio Universities College of Medicine
Explorations of Preservice Teachers' Learning Strategy Use, Volume 10, No. 2, Spring 1997

Donald A. Williams, The Ohio State University, Lima
Problems Related to Participants' Roles and Programmatic Goals in Student Teaching Supervision, Volume 10, No. 4, Fall 1997

Index of Articles: 1997

Dismantling Desegregation (Book Review)
Joseph Watras, University of Dayton
Volume 10, No. 2, Spring 1997

Educational Reform Through the Implementation of National Standards: A Response
Richard J. Reynolds, Connecticut State University
Volume 10, No. 1, Winter 1997

Effectiveness Testing Practices
Ronald N. Marso, Bowling Green State University
Fred L. Pigge, Bowling Green State University
Volume 10, No. 1, Winter 1997

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Roberta A. Fuller, University of South Florida
Volume 10, No. 2, Spring 1997

Examining What Should Be the Role of an "Internationalized" Land Grant Extension System
R. Kirby Barrick, University of Illinois at Urbana-Champaign
Barbara G. Ludwig, Ohio State University Extension
Volume 10, No. 4, Fall 1997

Explorations of Preservice Teachers' Learning Strategy Use
M. Kay Alderman, University of Akron
Loretta Wilkinson, Northeast Ohio Universities College of Medicine
Volume 10, No. 2, Spring 1997

A Field-Based Introduction to Urban Education at the Middle School
Susan M. Brookhart, Duquesne University
Volume 10, No. 2, Spring 1997

From Tourists to Citizens in the Classroom: An Interview with H. Jerome Freiberg (Conversations in Education)
Mary R. Sudzina, University of Dayton
Volume 10, No. 2, Spring 1997

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The *Mid-Western Educational Researcher* is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews, theoretical and methodological discussions that make an original contribution to the research literature, and feature columns. There are four issues of the journal published annually.

The journal is now accepting manuscripts for review and possible publication in 1997 and beyond. Manuscripts are submitted to blind reviews by at least two researchers with knowledge of the literature in the appropriate area. Furthermore, the editors will review the manuscript and make the final decision. The review process requires approximately three months.

Manuscripts are accepted from faculty, students, and professionals working in non-educational settings. Membership in the MWERA is not required in order to submit a manuscript for review. The editors encourage the submission of revised papers that have been presented at the annual meetings of the MWERA, AERA, and other professional organizations.

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Index of Articles: 1997 (cont.)

Fulfilling Its Promise, a Content Analysis of 20 Years of Research at MWERA
Thomas Andre, Iowa State University
Volume 10, No. 1, Winter 1997

How Teachers Connect Research and Practice
Mary M. Kennedy, Michigan State University
Volume 10, No. 1, Winter 1997

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Thomas R. Knapp, The Ohio State University, Columbus
Hak P. Tam, National Taiwan Normal University
Volume 10, No. 4, Fall 1997

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Gary Griffin, University of Arizona
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Volume 10, No. 1, Winter 1997

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Deborah L. Bainer, The Ohio State University, Mansfield
Christine S. Halon, The Ohio State University, Mansfield
Volume 10, No. 1, Winter 1997

1186

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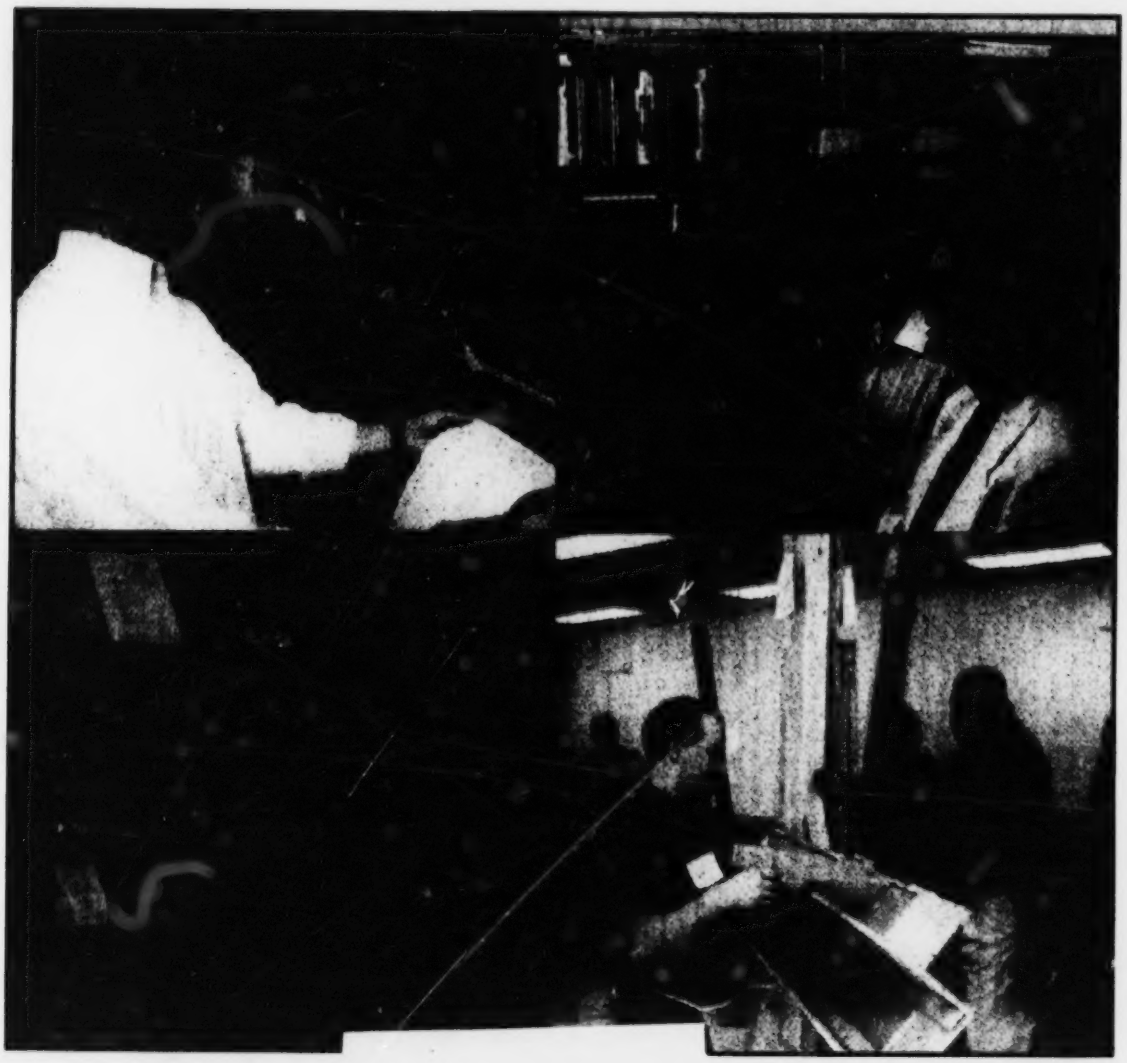

Iowa State University

1188

On the Cover

Located in Ames, Iowa, just 30 minutes north of Des Moines, Iowa State University is the nation's oldest land-grant university. Its park-like campus covers nearly 2,000 acres and includes 154 buildings, many of which are on the National Register of Historic Places. The campus features more than 200 works of art by internationally acclaimed artists such as Grant Wood and Christian Peterson.

Iowa State is a broad-based international university of science and technology with 25,000 students from every state in the United States and 120 other nations. The birthplace of the first electronic digital computer, the Atanasoff-Berry Computer, Iowa State is ranked the 19th "Most Wired" university by *Yahoo/Internet Life* magazine.

Iowa State ranked first among U.S. Universities in the number of licenses and options executed in 1995. Iowa State has received more R&D 100 awards for research innovation than all but one other university in the U.S. In 1996-97 sponsored funding received for research and educational programs at Iowa State totaled $190.9 million; $120.2 million was received for research alone.

At the founding of Iowa State University in 1869, the President, Adonijah Welch, created a professorship in the "science and art of teaching." Iowa State, thereby, became the first institution in America to offer teacher education courses for credit on a sustained basis as part of a four year bachelor's degree program.

Today, the College of Education is striving to become the best college of education at a land-grant university. More than 1,700 undergraduate students and 400 graduate students are enrolled in the college. More than 100 full-time faculty provide a strong faculty-student ratio in the college's four departments.

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The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

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MID-WESTERN EDUCATIONAL RESEARCHER

Volume 11, No. 1 Winter 1998 ISSN 1056-3997

Violence Goes to School
Jack Levin, Northeastern University
2

The Legal Context of Sexual Harassment In Education
Robert J. Shoop, Kansas State University
8

Conference Highlights
Thomas S. Parish, Kansas State University
18

President's Report
Kim K. Metcalf, Indiana University
20

Invitation for Proposals for 1998 Annual Meeting
21

Diversity Issues in Educational Research
James B. Boyer, Kansas State University
25

Learning About Sex: The Missing Paradigms and Challenges to Educational Researchers
Sharon McNeely, Northeastern Illinois University
29

The Role of Communication in Providing Leadership for School Restructuring
Theodore J. Kowalski, Ball State University
32

Technology and Teaching in the Communications Age
Molly Herman Baker, Western Illinois University
41

The Mid-Western Educational Research Association Gift Membership
43

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1130 BEST COPY AVAILABLE

Keynote Address

Violence Goes to School

Jack Levin
Northeastern University

Abstract

The growing problem of juvenile violence has found its way into all of our institutions, including our schools. More and more school administrators report having to deal with violence on an everyday basis and having to suspend students for carrying weapons or being involved in violent confrontations. In response, many observers have suggested solutions that are politically expedient, but simply won't work. They fail to address the question of what makes violence so appealing to so many youngsters, in the first place. Without providing healthy alternatives to violence, all the training programs, counseling, and therapy will have little effect on our crime rate. We need a cultural revolution at the grass-roots level.

During the last few weeks alone, the headlines have been filled with reports of hideous crimes committed by teenagers. A 16-year-old boy in Pearl, Mississippi fatally stabs his mother and then goes on a shooting spree at school where he kills his former girlfriend and another student. A 15-year-old boy in a suburb of Boston leaves 98 stab wounds in his 43-year-old neighbor, the mother of his best friend. A 15-year-old boy in Southern New Jersey kills an 11-year-old child who was going door-to-door selling candy. And a 14-year-old Florida boy shoots his sister simply because she talked on the phone too long.

Twenty-five or thirty years ago, such crimes would have seemed extraordinary not only for their extreme brutality or senseless motivation, but also for their rare occurrence. In 1967, if a teenager had murdered his sister because she wouldn't let him use the phone, we would have been talking about it for six months. In 1997, the same offense is regarded as the crime of the week. We shake our heads in dismay and then move on to the next horrific offense. Sadly enough, the most brutal and hideous crimes involving our teenagers are now viewed as commonplace or expected.

And there is some reality behind this perception. In urban and not-so-urban areas around the country, anxieties concerning violent crime have been reinforced by a soaring crime rate and by the growing participation of juveniles in the most serious criminal offenses. From 1985 to 1994, for example, the rate of murder committed by teenagers, ages 14-17, actually increased more than 170 percent. For 15-year-old boys, the increase was an incredible 212 percent (Fox, 1996). Younger and younger children now have more dangerous weapons in their hands, more dangerous drugs in their bodies, and a cavalier attitude toward human suffering.

Actually, the problem of desensitization to violence is even worse than the dreadful statistics concerning juvenile crime might suggest. While relatively few of our youngsters are committing hideous murders—about 1 percent is responsible for more than 30 percent of all homicides—they are being tolerated—perhaps even honored—by their friends and classmates. Millions of teenagers may not be able to shoot or stab someone themselves, but they are fully capable of looking on as others do so.

Several years ago, a teenager in Milpitas, California murdered his 14-year-old girlfriend and then returned to the scene with a dozen classmates to show them the corpse. One student covered the body with leaves to keep it from being discovered; others threw rocks at it. None of them contacted the police. This episode became the basis for a film in the 1980s entitled *River's Edge*.

More recently, Attorney Marsha Kazarosian filed a suit against the Winnecunnet, New Hampshire school district on behalf of the families of the three youngsters convicted in the murder of Greg Smart in Derry, New Hampshire. Kazarosian claimed that Pam Smart's love affair with her 15 year old student was made possible because she was negligently unsupervised by the Winnecunnet High School administration—that somebody in charge should have been keeping a watchful eye on Smart.

Whether or not school officials should have known, it appears that they may have been the only ones at Winnecunnet High who didn't. Statements made during the course of the police investigation indicate clearly that at least one month before the Derry police finally broke the case, the corridors of Winnecunnet High were already abuzz with rumors implicating the three students and their teacher. Yet nobody bothered to inform an adult.

More incredibly, statements later made to law enforcement officials indicate that students at Winnecunnet High were talking about Greg Smart's murder for two months *before* it actually occurred. With a simple phone call, any one of them might have prevented a murder. But nobody wanted to "snitch" or "tattle" on a classmate. Everybody was concerned about being rejected by friends. So they all kept quiet and let the murder plot proceed according to plan (Levin, 1993).

The impact of juvenile violence has been felt in every one of our institutions, including our schools. Some 35,000 teenagers go to school each day carrying a handgun. Almost half of all high school students report that their classmates carry weapons; and about 40 percent report that gangs are present in their school (Blumstein, 1995).

More and more principals report having to deal with violence on an everyday basis and having to suspend or expel students for carrying weapons or being involved in violent confrontations. More and more school administrators are attempting to counteract violence with some combination of a law enforcement strategy including metal detectors and security personnel as well as a conflict resolution program. And more and more principals and teachers consider violence prevention a priority for their schools. According to a study I recently conducted of schools in five urban school systems, even the elementary schools are feeling the impact of student violence in a major way. They too are dealing with violence on an everyday basis; they too are offering conflict resolution programs in response to episodes of violence between students and are expelling students for carrying weapons (Noguera, 1995; Levin and Johnson, 1997).

At least some part of the violence problem in schools around the country is linked to racial tensions. Between August 31 and September 18, 1990, pollster Louis Harris set out to determine the views of a nation-wide sample of students regarding the state of racial and ethnic tensions in America. Harris's staff talked with a cross-section of 1865 high school students who were attending the 10th, 11th, and 12th grades in public, parochial, and private schools around the country (Levin and McDevitt, 1993).

The pollster's findings paint a rather bleak picture of race relations among American youth of the 1990s. Apparently, confrontations between individuals of different races and religions have become, to use Harris's words, "commonplace" in the nation's high schools. More than half of the students interviewed claimed that they had witnessed racial confrontations either "very often" or "once in awhile." One in four reported having personally been a target of such an incident. Yet, only 30 percent of all students said that they were prepared to intervene to stop or even to condemn a confrontation based on racial hatred. On the contrary, almost half admitted that they would either join in the attack or, at the very least, agreed that the group being attacked was getting what it deserved (Levin and McDevitt, 1993).

The findings of a recent survey of all 1,570 elementary, middle, and secondary public schools in Los Angeles County also support the view that youthful violence is connected with race relations. Thirty-seven percent of these schools had encountered incidents of hate-motivated violence over the period of a year. As expected, students in middle and high schools were particularly likely to have experienced hate violence, with a response rate of 47% and 42% respectively. Somewhat more surprising was the finding that 34% of the elementary schools had also had violent episodes based on hate (Levin and McDevitt, 1993).

Reducing Juvenile Violence

The American Psychological Association (APA), recently made a number of recommendations most of which focus on changing the psychological condition of our youngsters. According to the APA Commission's report, the violent kids watch too much television, learn aggressive habits early in life, and handle frustration by lashing out at others. They have trouble learning social cues, are desensitized to violence, and lack self-esteem.

As a remedy, the psychologists suggested, among other things, that television networks carry fewer violent programs during the hours when children watch, that the schools teach their students to manage anger, and that family members stop fighting one another.

Although very much worth considering, I would argue that the suggestions proposed by the APA's Commission fall just a little short. Specifically, they fail to address the question of what makes violence so appealing to so many youngsters, in the first place. Why is it that, in many quarters around the country, semi-automatic rifles have replaced 35mm cameras, leather jackets, and CD players as status symbols of choice? And, why has serving a year behind bars become a rite of passage in some inner-city neighborhoods?

Without providing healthy alternatives to violence, all the training programs, counseling, and therapy we can muster won't have a profound effect on our crime rate. Whether we like it or not, many teenagers benefit—or at least believe that they benefit—from being deviant and destructive. In a single violent episode, they are able to impress their friends, make money, receive career training, feel powerful, protect themselves, and find acceptance among their peers. The most violent-prone teenagers aren't getting along at home, aren't making it at school, and can't find a decent job. In violence, they feel something they never felt before—they feel special, they feel important and wanted.

A couple of years ago, I appeared on a television talk show with three Nazi skinheads, young men who wanted to feel powerful and dominant, but who were totally unsophisticated with respect to understanding Nazi ideology. Angry and hate-filled, they wore Nazi uniforms and other symbols of power. It occurred to me that these three youngsters could just as easily have joined a gang or have become members of a cult. They were marginal youngsters who wanted to feel successful, wanted to feel important, but couldn't seem to make it in any middle class way. So they terrorized vulnerable people, just as other troubled teenagers find it entertaining to drop boulders through the windshields of oncoming cars, to spray bullets into crowds, or to break into apartments and automobiles in order to terrorize their occupants.

Jack McDevitt and I (1993) have found that the majority of hate crimes reported to the police—crimes against individuals because they are different in terms of race, religion, sexual orientation, or disability status—are committed by groups of teenaged boys for the thrill, the excitement—to feel something that they believe is lacking in their own lives—a sense of power and control. In the same way that some young men get together on a Saturday night to play a game of cards, groups of teenaged boys gather to destroy property or to bash minorities. They look merely to have

1192

some fun and stir up a little excitement...but at someone else's expense. They enjoy the exhilaration and the thrill of making someone else suffer.

For a while, Americans were discussing whether we should try caning our kids, the way it is done in Singapore. Legislation to introduce caning as an official criminal justice response to teenage violence is pending in at least a few states. Well, American youngsters are already comparing the size of their bullet wounds; if we were to institute caning, I'm afraid our kids would be pulling down their pants to show off the welts on their buttocks—sort of a red badge of courage. What seems to be a severe punishment in Singapore may, in the cultural context of the United States, turn out to be a reward.

Or, take jurisdictions in which parents are held criminally responsible for their teenagers delinquency. In Flint, Michigan, for example, parents can be fined a thousand dollars if their seventeen-year old children are caught smoking cigarettes in public. Of course, mommy and daddy ought to be held accountable for the destructive behavior of their preadolescent youngsters. But Two things bother me about any policy that punishes the parents for their teenagers transgressions. First, it sends the wrong message to teenagers who are all too eager to avoid responsibility for what they do wrong. And second, it sets up the possibility of dramatically increased levels of domestic homicide. In many cases, when we speak of children, we are really talking about physically mature youngsters who are fully capable of having their way with their parents. Two skinhead brothers in Pennsylvania recently murdered their mother, father, and 11 year old brother, after their parents wouldn't let them drive the family car. One of the murdering youngsters was a 15 year old boy who also happened to be 6 foot 5 and weighed 245 pounds. Rather than make mommy and daddy the super cops of society—at the very time when the family is at risk of going the way of Jurassic Park—we should be giving support, assistance, and encouragement to parents everywhere. Let's get them involved once again in the lives of their teenagers—but not because they might otherwise be punished.

Uniforms seem to make a difference—at least in the opinions of principals who have tried them. They level social class differences in dress; they make it easier to spot intruders; and, at least for a short period of time, they eliminate gang distinctions. But these distinctions apparently soon reappear, just as soon as gang members discover that they can find other ways to communicate their membership. The research so far does not seem to support the effectiveness of uniforms as a method of fighting school violence.

Of course, conflict resolution programs, especially if they are started very early in elementary schools, make at least some difference—perhaps an important difference—in stemming the tide of violence. Even if the results of such programs cannot be generalized to non-school settings, they are as important as metal detectors and security personnel as an effort to control the school day for children and teachers who deserve a safe environment in which to learn. By the way, recent evidence suggests that the positive effects of conflict resolution programs are very frequently generalized to interactions after classes and outside of the school environment.

But no matter how effective, such programs will not make the big difference. Conflict resolution programs, for example, aim at reducing the traditional forms of violence and conflict that develop between teenagers and children. The problem is that the most troublesome, most marginal students will not be persuaded by peer mediation or programs designed to teach them to manage their anger. Their problems are structural in origin and will require a structural change in response.

In many jurisdictions, there are simply no alternative programs designed for students who are expelled because they are violent at school. Instead, these violent-prone and alienated youngsters—the very children and teenagers who are responsible for committing the most heinous crimes of all—are left to walk the streets idle, bored, and unsupervised. They may no longer be an immediate threat in the context of the school environment, but, in the long run, they will become even more threatening to everyone, including themselves.

As for the Commission's recommendation that broadcasters provide programs that counter violence, I'm afraid that it simply won't work. True, children spend too much of their time watching television—on average, four or five hours daily. It is also true that much of what they view on the tube is violent and desensitizing. In fact, the average child grows up observing more than 30,000 murders on TV, more than 100,000 acts of violence, not to mention what he or she sees in R-rated slasher films and in violent video games.

The V-chip strategy for limiting children's access to violent television sounds good in theory. Parents will now be able to eliminate electronically the most offensive network programs from their children's after-school viewing options. Unfortunately, the V-chip will not work, and it sends the wrong message to adults. By installing this bit of high-tech wizardry in their TV sets, they can continue to ignore their unsupervised children after school.

In his State of the Union address, President Clinton voiced his support for V-chip technology and urged the television industry to adopt the measures taken years ago by motion picture producers. Yet, the motion picture business has been far more offensive than the networks when it comes to filling our youngsters' heads with tasteless images of human destructiveness. In fact, acts of violence are now routinely depicted as graphically as possible on the screen, without regard for how they may affect impressionable young viewers. In one motion picture after another, children are treated to disgusting scenes of decapitation and dismemberment. Victims are shown with their brains literally blown apart, their heads missing, their fingers sliced off, and their intestines exposed. What is more, many of these films are available as videotapes for rent, escaping the ability of a V-chip to eliminate them from children's viewing.

Some concerned parents and lobbying groups have praised the rating system employed by the motion picture industry (G, PG, PG-13, R, NC-17, and X), a voluntary code that was adopted in the 1960s in order to placate concerned parents. Yet, it is the rating system itself that has inspired the producers of motion pictures to introduce more and more gratuitous scenes of human destruction and suffering, not to enhance the plot, but just to attract teenagers who tend to spend freely on entertainment. Without such gory details, their films might get a PG or even a G rating and be shunned by most ten-year-old boys who refuse to go to "kids' movies."

Ironically, the films most likely to contain graphic scenes of violence are, under the voluntary code of the motion picture industry, ostensibly off limits to movie-goers under 17 years of age, unless they are accompanied by an adult. Because the code is rarely enforced, however, the majority of the audience for the most grotesque of these films is often comprised of unsupervised children who are thrilled by the prospect of seeing unlimited quantities of blood and guts. Thus, the industry's rating system has provided a standard of consumer decision-making, not for parents, but for their under-age children who search the newspaper advertisements for a film that contains large doses of sex, violence, and gore.

Now we have done for television what has been so disastrous for motion pictures. Home-alone teenagers can turn to the *TV Guide* to find their favorite programs—those with the equivalent of an R rating. In the meantime, it will take years before their parents trade in their sets for one containing a V-chip. And, within six months, mommy and daddy will have forgotten how to program the V-chip on their set before leaving for work or will have given in to their complaining teenagers' constant demands. Remember all the VCRs blinking in homes around the country? Well, they're still blinking 12-12-12-12.

Once again, the question involves providing healthy alternatives. What will bored and alienated teenagers do when they are not watching TV? It is doubtful that they will instead read the classics or take up chess. Rather than worry so much about what our children are watching, we might be more concerned about who is watching our children.

It's not that television is so powerful. It's that our other institutions—our churches and synagogues, our neighborhoods, our schools, our universities, and our families—have become so weak on the issue of supervising youngsters.

Japanese television is much more violent than its American counterpart; yet the level of street violence in Japanese cities is extremely low. One reason is that Japanese traditional culture continues to be quite powerful even among young people. Another reason is that Japanese television is hardly ever used as a baby-sitter, the way that it is in the United States. In Japan, children who watch violent programs are viewing with adults—their parents and their grandparents. They have adults around to monitor, to guide, to interpret, to explain.

If we were really smart, we would begin now to invest as much in our young people as we invest in the stock market. We must intervene as early as possible in the lives of children who are troubled, not because we fear they will grow up to be Jeffrey Dahmers, but simply because it is the right thing to do and because it will be effective in the long run. If we were smart, we would repair our nation's playgrounds, put lifeguards at neighborhood swimming pools, build decent community centers, and make sure that kids have summer and after-school jobs. For youngsters who are otherwise unsupervised and idle, we would provide quality day care and after school programs.

To an increasing extent, city high schools do offer an array of after school programs including intramural athletics, drama, art, music, and student government. Unfortunately, such programs and activities are virtually absent from grades K through 5, leaving many younger children without opportunities for wholesome experiences and activities in the afternoon. Moreover, after-school high school and middle school programs in large cities are usually restricted to students who are in academic good standing, haven't been troublesome in the classroom, have economic resources, and can find their own transportation home (Levin and Johnson, 1997). In other words, they exclude the impoverished, alienated, and rebellious students—the very students who are in greatest need of supervision.

It took 20 or 30 years to get to the point where violence, in some cities, seems out of control. It will probably take at least a decade to get us going firmly in the opposite direction. Try telling that to our governors, senators, and representatives who come up for re-election every two, four, or six years. They look for politically expedient short term answers, even if they won't work. They emphasize three strikes and you're out; boot camps; uniforms, curfews; the death penalty; holding parents criminally responsible for their teenagers violations of the law, and dismantling the juvenile justice system. These are policies that might make Americans feel more secure, but they will do little more.

Take something as simple as curfews. They sound great—get the kids off the streets after eleven or twelve, so they won't hurt one another. Well, cities like San Antonio have tried curfews, with almost no effect at all. The problem is that only 10 percent of all serious crimes committed by under-age teenagers are committed after 11 pm and before 6 am. Almost 50 percent of all juvenile crimes (not to mention premarital pregnancies) are committed between 2 and 7 in the afternoon—after school and before dinner—or should I say before mommy and daddy come home from work (Fox, 1996).

And many of our youngsters, lacking in support systems—and Im talking about even those youngsters who grow up in middle-class areas—feel that they are on their own. Their parents may be divorced; both of their parents may hold full time jobs; or they may grow up in a single-parent household. And, when they come home from school, too

many of our youngsters are literally alone or with a group of friends who are unsupervised. Twenty years ago, at least some of the neighbors would have been home, peering through the blinds to keep an eye on the block. Not now; not in most neighborhoods—everybody is working, including the neighbors.

So fifty seven percent of all teenagers and children now grow up without full time parental supervision—Forty nine percent under the age of six. Of course, some of them do have a healthy alternative—quality daycare, after-school activities, summer jobs, community centers, athletic programs. But many others do not. So they end up raising themselves (Fox, 1996).

We used to hear about elderly residents in high crime areas who virtually become prisoners in their own homes. To avoid crime, they double lock their doors and stay inside their apartments after dark, afraid to venture out on the streets under any condition. Instead, they watch television. In fact, TV becomes, in some cases, the only friend they have.

Well, this same pattern is now occurring among teenagers in high crime neighborhoods. It's called street survival skills; but what it means is that more of our youngsters are staying off the streets in order to survive; they come home from school every day, double lock their doors, and watch television until their parents come home from work.

The Future of Juvenile Violence

Based on demographics alone, we are in trouble. The children of the baby boomers will shortly join the violence-prone age group—those who are in their late teens and early twenties and who commit a disproportionate share of violent crimes. Over the course of the next decade, the number of teenagers, 15-19, will increase by 15 percent. If we are not effective now in our efforts to reduce the scourge of teenage violence, we may look back at the 1990s as the lull before the crime storm.

At the same time, allow me in closing to give you at least a little bit of good news. Believe it or not, the murder rate has been coming down in many of our major cities. Now, let's not kid ourselves into believing that we've conquered the crime problem. Things are by no means great in the crime department, but, in many places, they are getting better. A drop in the murder arrest rate over the last two or three years is, at the very least, a good sign. We may not be totally out of the woods yet, but we can at least see sunlight through the branches.

Part of the explanation for the decrease in serious crime is probably demographic. The 76 million baby boomers have matured into middle age and out of the crime-prone age group. Rather than commit murder and aggravated assault, they have graduated into such lower-risk white collar offenses as fraud and embezzlement.

Another factor involves a beefed up criminal justice system, putting more and more police officers between citizens and criminals. In New York City and Houston, Texas, for example, zero-tolerance policing has taken more and more offenders off the streets and out of the reach of innocent victims. William Bratton, when he was still New York's Police Commissioner attributed the success of his crime-fighting efforts to a get-tough policy that locks away street criminals long **before** they have had the opportunity to commit serious offenses. Of course, his policies are now also being blamed for the rise in excessive force complaints against New York's Finest. Many principals have adopted the same zero-tolerance policy regarding students who carry weapons to school.

But the most important factor in declining murder rates in our major cities may have nothing to do with policies, population or prisons. Americans everywhere, at the grassroots level and up, are just beginning to recognize that they can make the difference in the crime rate. At the grass roots level, they are working to repair the moral, social, and economic damage done to our youngsters and to take the glamour out of destructive behavior.

Fed up with crime, ordinary citizens are enthusiastically addressing the issue of violent crime and, in the process, are re-defining it. Everywhere you look, you find groups and organizations not unlike this one focusing on violence in conferences, lectures, keynote speeches, and workshops. Moreover, taking their cue from growing popular sentiment, local institutions have sponsored a number of interesting programs aimed at local youngsters—churches running athletic programs and gun-buyback programs, companies providing more after-school jobs with a future, college students going into inner-city schools to do tutoring, mentoring, and peer-mediation, universities providing scholarships to youngsters in the local community, and teachers and parent groups volunteering to supervise after-school activities.

Parallels can be found in our changing attitudes toward cigarette smoking. Prior to the Sergeant General's Report in 1968, smoking was widely regarded as fashionable and stylish. But more than twenty five years later, the campaign has discredited smoking and stigmatized smokers. Hopefully, the same may soon happen to individuals who have a propensity for violence.

Of course, although the anti-smoking campaign reduced the consumption of cigarettes among adults, it essentially failed to convert young people. In 1997, an additional 4000 teenagers continue to take up the smoking habit everyday.

In the same way, teenagers aren't likely to be touched by a cultural revolution that asks that they become less violent and destructive. Many youngsters don't think about long-term consequences—whether about contracting lung cancer or going to prison. Indeed, teenagers are likely to feel invincible and therefore immune from the impact of their own violent behavior.

But unlike smoking campaigns, the cultural revolution in attitudes toward violence is being aimed not at teenagers at all, but directly at their parents, their teachers, their clergy,

their neighbors, their government representatives—at adult members of society who are (or should be) responsible for dealing with teenagers. This is important because our youngsters will change only to the extent that society's response to them changes first.

Teenagers who have been routinely ignored, unsupervised, and left to fend for themselves must discover that their parents and teachers care. Youngsters who join gangs and carry weapons to school must be guided and counseled more and more by clergy, social workers, and probation officers. For the first time in their young lives, our teenagers will feel important, they will feel special, because somebody cares what happens to them. And that will make all the difference, for all Americans everywhere who want to feel secure in their own schools, homes and neighborhoods.

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Interactive Session with Tom Knapp

Roundtable Discussion

Kick-off Address

The Legal Context of Sexual Harassment In Education[1]

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Introduction

Sexual harassment of students and faculty members in elementary, secondary and post-secondary schools has been drawing widespread attention from the general public, the media and the courts in recent years. This new-found awareness may not be an indication of more prevalent occurrences of sexual harassment, but rather to the fact that victims are more willing to come forward to report and complain. Behavior that may once have been tolerated or handled behind closed doors is now frequently the subject of newspaper headlines, television talk shows, new stories and civil court dockets. Sexual harassment suits are burgeoning. As the most casual observer has noticed, public schools and university communities across the country are embroiled in heated debates about the existence, seriousness, causes and consequences of sexual harassment on campus.[2] Although sexual harassment is a very difficult and complex issue, one thing is clear; sexual harassment is a serious problem and schools and universities must act to prevent it from occurring. As they respond to the challenge of eliminating sexual harassment, they must do so in light of the impact of the laws of sexual harassment on their deliberation.

Overview

Sexual harassment is wrong because it hurts people. Sexual harassment is devastating to the victim, it can destroy the career of the harasser and it can significantly damage the reputation of the school district or university. Society through its various legislative efforts has made sexual harassment illegal. School districts and universities are increasingly being held liable when they do not carry out their legal responsibility to prevent sexual harassment and/or do not respond promptly and appropriately when complaints arise.

For more than twenty years legislators at the state and federal levels have been grappling with the issues surrounding sex discrimination. This struggle has resulted in laws being passed that set forth standards and procedures for ensuring nondiscrimination. The goal of all of these enactments is to ensure nondiscrimination and educational equity for both males and females.

Although it is now well established that sexual harassment is a form of sexual discrimination, this understanding is still evolving. As schools and universities have become aware that they are liable for violations of federal law (Title VII and Title IX), they have begun to act affirmatively to avoid liability. However, active debates continue to focus on the validity of the perceptions of their experiences of targets of sexual harassment, the due process protection that is necessary, and the school or university's liability for any harm that has occurred.

From the first case[3] to recognize a claim for sexual harassment in 1976, to the 1994 case of *Franklin v. Gwinnett County Schools*[4], challenges in the sexual harassment context have been based on statutory and less frequently, constitutional grounds. Courts continue to be called upon to illuminate the legal status of this evolving area of the law. Each new case provides an opportunity for the court to resolve uncertainties and clarify what constitutes sexual harassment. Sexual harassment cases are heard and decided in the context of constitutional challenges under the equal protection clause of the Fourteenth Amendment and the equal protection component of the Fifth Amendment. Recent court decisions have clarified the level of judicial review and the nature of proof required to establish a violation. However, even when courts provide guidance, there is often sharp disagreement in concrete cases. These disagreements generally focus on the questions of truth, sanctions and school district or university liability.

The primary statutory bases for sex discrimination questions are Title VII of the 1964 Civil Rights Act, as amended, and Title IX of the Education Amendments of 1992. However, the definition of what constitutes sexual harassment is far from static. In the hope of achieving harmony, the majority of us voluntarily allow laws to regulate our behavior. Lawmakers and judges are involved in the constant process of attempting to strike a balance that allows individuals as much freedom as possible while at the same time protecting the rights of others. The Constitution protects our individual rights while various state and federal laws protect the general welfare of society and implement the constitutional protection of individuals.

Because our society is made up of people who hold many different values, new rules are not accepted by everyone at the same rate. Some people are way out in front of a value shift. They are the people who are fighting for a new idea before most of us understand what they are talking about. For example, Farley and others coined the term sexual harassment in 1974,[5] but it wasn't until 1986 that the Supreme Court ruled that sexual harassment was a form of sex discrimination. By the time a new idea is formalized into law, most people have formed an opinion about it, and the majority of the people accept the new law. However, there are always people who continue to fight against a new value, even after it is passed into law. They keep testing the resolve of society to uphold the new law. Some of this testing

is taking place on the campus and some is taking place in the courts. The current uncertainty about the legal status of sexual harassment is an example of the complex process of translating a new value into new rules for behavior.

Legal Interpretation of Sexual Harassment

Sexual harassment is any unwelcome behavior of a sexual nature that interferes with a persons work or education. The term "unwelcome" indicates the action or behavior was unsolicited and nonreciprocal. In other words, the person witnessing or being affected by the behavior didn't "ask for" or invite the behavior. For example, wanted kissing, touching, or flirting, is not sexual harassment.

"Behavior of a sexual nature" includes virtually any conduct that refers to sex. Such conduct can include using profane language or telling off-color jokes. It includes using sexist terms such as "babe" or "bitch," or "bimbo" or making comments about body parts. But, it can also include what some may consider to be "terms of endearment" such as "honey," "baby," "darling," etc. Behavior of a sexual nature includes leering and ogling, and without question, any kind of unwanted touching such as patting, hugging, and pinching. Finally, any request for sexual favors in return for benefits meets the criteria established for sexual harassment.

Although the concept of sexual harassment is not completely settled in law or fully understood by society as a whole, courts have clearly and consistently affirmed that the workplace and the classroom must be free from sexual harassment. While not legally required to do so, the courts tend to look to the Equal Employment Opportunity Commission (EEOC) for guidance on matters relating to sexual harassment. In 1988 the EEOC issued a document to all field offices entitled *Policy Guidance on Current Issues of Sexual Harassment.* The document outlined the behavior that constitutes sexual harassment. The guidelines reminded field personnel that sexual

harassment is a form or subset of sexual discrimination and is therefore prohibited by Title VII of the 1964 Civil Rights Act.

The EEOC drew upon a substantial body of judicial reasoning in holding that Title VII affords the right to work in an environment free from discriminatory intimidation, ridicule, and insult. The student's workplace is school, and consequently students are afforded this same right.

Over the past ten years most sexual harassment cases have been based upon the *EEOC Guidelines on Discrimination Because of Sex.* According to these guidelines, unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature is sexual harassment if;

- submission to such conduct is made either explicitly or implicitly a term or condition of an individual's employment,
- submission to or rejection of such conduct by an individual is used as the basis for employment decisions affecting such individual, or
- such conduct has the purpose or effect of unreasonably interfering with an individual's work performance or creating an intimidating, hostile, or offensive working environment.

The first two subsections of the EEOC guidelines define *quid pro quo* harassment. The third subsection describes hostile environment sexual harassment. A subset of the hostile work environment is known as sexual favoritism.

Quid pro quo, environmental, and sexual favoritism sexual harassment regularly occur on school and university campuses. Although all three are forms of discrimination, and it is sometimes difficult to distinguish between the categories, it is important to do so because schools and universities are held to different standards of liability for each. Often these forms overlap or occur simultaneously. However, each is a distinct category and provides for a separate complaint or cause of action. The following is an overview of each category of sexual harassment.

Quid Pro Quo

Quid pro quo is a Latin term that means, "you do something for me and I'll do something for you." In the context of sexual harassment of educational employees or students, *quid pro quo* may include an offer of special treatment such as awarding a better grade, letter of reference, promotion or merit raise in return for sexual favors. It can also be a threat of retaliation. For example, *quid pro quo* occurs if a teacher or professor threatens to lower a grade or refuses to write a letter of recommendation or a principal or department chair threatens to withhold a recommendation for promotion or tenure if a sexual request is rejected. *Quid pro quo* also takes place if a teacher or professor threatens a student with some penalty if the student does not consent to have a sexual relationship with the teacher or professor. One critical aspect of *quid pro quo* is that courts hold institutions liable for even a single incident. In *quid pro quo* sexual harassment the deprivation of educational benefits, once such deprivation is proven, allows the victim to ask the court to provide relief.

Quid pro quo sexual harassment is the easiest type of harassment to recognize and has received more attention from the media and consequently it is better understood than other forms of sexual harassment. In cases of *quid pro quo* the institution is generally held liable even if it had no knowledge of the specific behavior. The Civil Rights Act of 1991 permits an award of compensatory and limited punitive damages against private employers. However, public employers are only liable for compensatory damages.

Although *quid pro quo* sexual harassment frequently occurs and the consequences are devastating, hostile educational environment is the most prevalent and misunderstood form of sexual harassment.

1198

Hostile Educational Environment

Any sexually-oriented conduct or any sexually-oriented atmosphere that is intimidating or offensive to a reasonable person, can be construed as creating a hostile educational environment. In the workplace this behavior is called hostile work environment sexual harassment, in a school or university setting I refer to it as a hostile educational environment. This concept is sometimes confusing because men and women often perceive the very same behavior in quite different ways. What a man might consider innocuous, a woman might consider blatantly offensive. It is important to remember that courts now tend to favor the victim's point of view.

One critical dimension of the hostile educational environment category is that sexual harassment can occur even though the victim does not suffer any loss of economic or tangible benefits. Unlike *quid pro quo*, hostile educational environment requires a consistent pattern of behavior. A single event does not necessarily constitute a violation. In order for a behavior to be considered to have created a hostile educational environment, it must be "sufficiently pervasive and severe."

What Constitutes A Hostile Educational Environment

A hostile environment in an educational setting is essentially the same as it is in other workplace settings. In the school or university setting the hostile educational environment theory is based on the assumption that the relationship between the student and the school and the subordinate and the supervisor is very significant and that students and subordinates should be protected from psychological as well as physical abuse. Each student or employee should be able to come to class or work free from fear and free from harm.

It is important to remember that the person who creates a hostile environment does not have to have formal power. Therefore, co-workers and fellow students can crate a hostile educational environment for each other. It is also possible for a subordinate to create a hostile environment for a supervisor and for a student to create a hostile environment for a faculty member.

Sexual Favoritism

A third type of sexual harassment is actually a subset of environmental sexual harassment. Sexual favoritism is also fairly easy to identify. It occurs when a student or employee receives benefits as a result of his or her submission to sexual advances or requests for sexual favors. The victims of the harassment may be the other students or employees who are treated unfairly because they are not objects of the romantic interest of a supervisor. In the workplace, this type of sexual harassment has resulted in successful law suits brought on behalf of qualified persons who were denied employment opportunities or benefits. However, courts have required proof of the sexual relationship, not merely rumors or innuendos. Courts have yet to offer consistent views on how to treat sexual harassment cases in which a student is favored by a teacher who has a romantic interest in him or her.

Issue of Intent

Some people are confused about the role that intent plays in determining whether or not sexual harassment has taken place. Faculty members who have been accused of sexually harassing students often reply that they did not intend to embarrass, or that they were only teasing. They apparently assume that this is some how a defense against the impact of their actions. Many people who have been accused of sexual harassment admit that they committed the behavior but contend that they did not intend the behavior to be offensive. This argument demonstrates a lack of understanding of sexual harassment. The behavior does not have to be sexual in nature. Nor is the *intent* of the harasser relevant. It is the *impact* of the action that determines whether or not sexual harassment has taken place.

In order for a behavior to be considered to have created a hostile educational environment, four elements must exist.

- **First**, the harassment must be based on a person's sex.
- **Second**, the behavior must be unwelcome to the victim. The victim must not have solicited or incited the offensive behavior, and the victim must regard the conduct as undesirable or offensive.
- **Third**, the offensive behavior must be sufficiently severe or pervasive to alter conditions of the learning or working climate to interfere with a person's ability to work learn, or partake in the opportunities offered by the institution by creating a hostile educational environment. One off-color joke or comment will usually not be considered to be sexual harassment.
- **Fourth**, in order for a school or university to be liable for sexual harassment, it must have known or should have known of the harassment and failed to take prompt, effective, remedial action. Because the school board or university is expected to control the campus environment, it is held responsible for sexual harassment.

Title VII

Title VII of the Civil Rights Act of 1964 as amended by the Equal Employment Opportunity Act of 1972, the Pregnancy Discrimination Act of 1978 and the Civil Rights Act of 1991 prohibits private employers, state and local governments, and educational institutions employing more than 15 individuals from discriminating on the basis of race, color, religion, sex or national origin in all aspects of employment. It does not cover students, other than those employed by the institution. The 1972 amendments permit employees and applicants to file suit in federal district court if they are not satisfied with the employers disposition of their complaints. This act covers all aspects of employment including hiring and firing; compensation, assignment or classification of employees; transfer, promotion, layoff or recall; job adver-

tisements; recruitment; testing; use of company facilities; training and apprenticeship programs; fringe benefits; pay, retirement plans and disability leave; or other terms and conditions of employment.. As amended in 1991, it allows plaintiffs, including those alleging sexual harassment, to sue for monetary damages. This act allows recovery of compensatory damages only in cases of intentional discrimination, and punitive damages only against non-public employers who act with malice or reckless indifference. The damages are currently capped depending on the number of employees, with a maximum of $300,000. Title VII also prohibits retaliation against a person who files a charge of discrimination, participates in an investigation or opposes an unlawful employment practice.

In 1986, the Supreme Court relied on EEOC guidelines when it unanimously held in *Meritor Savings Bank, FSB v. Vinson*[6] that both *quid pro quo* and hostile-environment sexual harassment are a subset of sex discrimination and are actionable under Title VII. Unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature constitutes sexual harassment when submission to or rejection of this conduct explicitly or implicitly affects an individual's employment, unreasonably interferes with an individual's work performance or creates an intimidating, hostile or offensive work environment. According to EEOC, sexual harassment can occur in a variety of circumstances, including but not limited to the following:

- The victim as well as the harasser may be a woman or a man. The victim does not have to be of the other sex.
- The harasser can be the victim's supervisor, an agent of the employer, a supervisor in another are, a co-worker, or a non-employee.
- The victim does not have to be the person harassed but could be anyone affected by the offensive conduct.
- Unlawful sexual harassment may occur without economic injury to or discharge of the victim.
- The harasser's conduct must be unwelcome.

Harris v. Forklift Systems, Inc.

Although, by all accounts, the number of sexual harassment cases is rapidly increasing, *Harris v. Forklift Systems, Inc.*[7], was only the U.S. Supreme Court's second decision on this issue. Although the Court did not provide the hoped tests for hostile work environment claims, it did clearly warn employers that sexual harassment will not be tolerated. This case raised the question of whether employees alleging sexual harassment on the job must prove psychological injury in order to collect damages under Title VII. Although Harris had shown that her boss subjected her to "a continuing pattern of sex-based derogatory conduct," the Sixth Circuit Court of Appeals dismissed the case.[8] The Court said she was unable to prove that the abuse affected her "psychological well-being."

In a unanimous decision the Supreme court reversed the lower court decision. The Court held that a plaintiff charging sexual harassment does not have to prove psychological harm. The Court reminded employers of the rules it made in 1986 in *Meritor Savings Bank v. Vinson.*[9] According to the Court, "sexual harassment is against the law when it is sufficiently severe or pervasive to alter the conditions of the victim's employment and create an abusive working environment. The environment would be considered abusive if a "reasonable person" would find it objectionable and the victim subjectively found it objectionable. The Court stated that, a mere utterance of an epithet which engenders offensive feelings does not violate Title VII. However, "Title VII comes into play before the harassing conduct leads to a nervous breakdown."

The Court stated that a jury can determine whether an environment is "hostile" or "abusive" only by considering all of the circumstances that effect an employees psychological well being. These circumstances would include:

- the frequency of the discriminatory conduct;
- its severity;
- whether it is physically threatening or humiliating, or a mere offensive utterance; and
- whether it unreasonably interferes with an employee's work performance.

This decision gave all employers a clear warning that they are responsible if they permit abusive or hostile work environments to exist. By focusing attention on the work environment rather that the psychological make-up of the victim, this decision will help victims of sexual harassment.

The Court stated that Title VII "bars conduct that would seriously affect a reasonable person's psychological well-being, but the statute is not limited to such conduct. So long as the environment would reasonably be perceived, and is perceived, as hostile or abusive, there is no need for it also to be psychologically injurious."[10]

Civil Rights Act of 1991

Shortly after the Senate confirmation hearings of Supreme Court Justice Clarence Thomas, Congress enacted the Civil Rights Act of 1991 for the express purpose of providing additional remedies under federal law to deter unlawful discrimination. By providing for compensatory and punitive damages relating to punishment and providing a trial by jury, this act actually encourages suits charging sexual harassment and should deter employees from discriminating. In addition to the back pay, front pay, reinstatement, and attorneys' fees previously available under Title VII, this act authorizes as much as $300,000 in compensatory damages.

EEOC

The U.S. Equal Employment Commission (EEOC) enforces Title VII.[11] EEOC provides oversight and coordination of all federal regulations, practices and policies affecting equal employment opportunity. EEOC also develops policies, writes regulations, conducts outreach and education

1200

efforts, and coordinates all federal issuances affecting equal employment opportunity, and implements approved affirmative employment programs.

If a person believes that he or she has been discriminated against under the protections of Title VII, he or she may file a charge of discrimination with EEOC. Although the charge can be filed in writing, by phone or in person, there are strict time frames that must be adhered to. In order for EEOC to act and to protect the right to file a private lawsuit charges must be filed with EEOC within 180 days of the alleged discrimination. EEOC's policy is to seek full and effective relief for each and every victim of employment discrimination, whether sought in court or in conciliation agreements before litigation, and to provide remedies designed to correct the discrimination and prevent its recurrence.

If the evidence shows there is reasonable cause to believe discrimination occurred, EEOC then attempts to persuade the employer to voluntarily eliminate and remedy the discrimination. Monetary damages may also be available to compensate for future monetary loss, mental anguish or pain and suffering, and to penalize a respondent who acted with malice or reckless indifference. The employer may also be required to post a notice in the workplace advising employees that it has complied with orders to remedy the discrimination.

If efforts at conciliation fails EEOC may consider the case for litigation. Most charges are conciliated or settled, making a court trial unnecessary. However, EEOC may then file a lawsuit in federal district court on behalf of the charging party.[12] As a result of court action, the EEOC regulations on sexual harassment have been upheld as a lawful regulatory interpretation of Title VII of the Civil Rights Act of 1964, and that sexual harassment is a violation of Title IX of the Education Amendments of 1972.

Title IX

In the late 1960s and early 1970s concerned educators and students intensified the struggle against sex bias and discrimination in our nations schools and universities. At that time Title VII specifically excluded educational institutions from its terms. An awareness of this exclusion and a commitment to equity resulted in the passage of Title IX of the Education Amendments of 1972. The legislative history of Title IX makes it clear that Congress intended to apply Title VII claims standards to Title IX.

Title IX of the Education Amendments of 1972 prohibits discrimination on the basis of sex in educational programs or activities which receive federal financial assistance. Title IX covers both employees and students and virtually all activities of a university. The prohibition covers discrimination in employment of professors and other university personnel as well as discrimination in admissions, financial aid, and access to educational programs and activities. Title IX states: "*No person in the United States shall on the basis of sex be excluded from participating in, be denied the benefits of or be subjected to discrimination under any education program or activity receiving federal financial assistance.*" In general, Title IX is enforced by the Department of Education. Under Title IX students may sue to collect monetary damages from the school or the school may lose federal funds.

Elementary and secondary school students as well as university students are protected by Title IX of the Education Amendments of 1972. Title IX is one of the most sweeping sex discrimination laws ever passed. Although it had little early enforcement, it is now the primary tool that defines equal educational opportunity for women in universities. Under Title IX, sexual harassment is defined as verbal or physical conduct of a sexual nature, imposed on the basis of sex, by an employee or agent of a recipient that denies, limits, provides different, or conditions the provision of aid, benefits, services or treatment protected under Title IX.

The courts look to the principles developed under Title VII when they interpret Title IX. Although Title IX law has evolved slowly, it is clear that sexual harassment is sex discrimination under Title IX. In several recent Title IX cases, the courts have continued to clarify how Title VII standards apply to Title IX claims.[13] The first federal case brought under the auspices of Title IX dealt with *quid pro quo*, hostile environment and appropriate grievance procedures. In *Alexander v. Yale* the plaintiff alleged that she received a low grade because she refused to cooperate sexually with her professor.[14] Although leaving the other issues undecided, the Second Circuit confirmed the right to sue for *quid pro quo* sexual harassment. In two 1986 cases federal courts allowed claims based solely on the allegation of hostile work environments.[15] In the 1992 case of *Franklin v. Gwinnett County Public Schools*,[16] the Supreme Court ruled that a teacher who sexually harassed and abused a student was engaging in sexual discrimination. The Court allowed compensatory damages as a remedy for the intentional violation of Title IX.

Office for Civil Rights

Title IX is enforced by the Office for Civil Rights (OCR) at the U.S. Department of Education. In August of 1996 OCR wrote a letter to all school administrators confirming the department's position regarding sexual harassment of students in our schools.[17] This letter was written in response to sexual harassment that occurs during school activities or on school grounds by faculty members against students and by students against other students.

The letter reported that the OCR has investigated claims of peer harassment since 1989 and in appropriate cases, found schools liable under Title IX. OCR's position is consistent with United States Supreme Court precedents and well established legal principles. On march 10, 1997 the U.S. Department of Education published "Sexual Harass-

1201

ment Guidance: Harassment of Students by School Employees, Other Students, or Third Parties."[18]

By issuing this guidance the U.S. Department of Education has affirmed that the elimination of sexual harassment of students in public schools and universities is a high priority. This guidance was developed and disseminated as a result of OCR's knowledge that a significant number of students, both male and female, have experienced sexual harassment, that sexual harassment can interfere with a student's academic performance and emotional and physical well-being, and that preventing and remedying sexual harassment in schools is essential to ensure nondiscriminatory, safe environments in which students can learn. This guidance makes it perfectly clear that OCR interprets Title IX of the education amendments of 1972 (Title IX) as prohibiting discrimination on the basis of sex in education programs and activities receiving federal financial assistance. This prohibition is based on the fact that OCR has long recognized that sexual harassment of students engaged in by school employees, other students, or third parties is covered by Title IX. OCR's policy and practice is consistent with the Congress' goal in enacting Title IX. OCR also believes their guidance is consistent with United States Supreme Court precedent and well-established legal principles that have developed under Title IX, as well as under the related anti-discrimination provisions of Title VI and Title VII of the Civil Rights Act of 1964.

According to the Title IX regulation each institution must provide a grievance procedure for sex discrimination. Title IX's protection against sexual harassment covers prospective students, students, and employees of programs which are operated by the university. Thus employees, including student employees may file under both Title VII and Title IX. Title IX coverage also extends to other programs that receive significant assistance or are considered part of a school's curriculum.

OCR can conduct compliance reviews on its own initiative, and is required to conduct a prompt investigation whenever a complaint is filed. If after an investigation is conducted OCR determines that sexual harassment has taken place it attempts to secure voluntary compliance from the institution. OCR does have the authority to institute proceedings to suspend or terminate federal assistance or bar future assistance but rarely does so. It may also request the Department of Justice initiate court action.

Unlike Title VII there is no award cap placed on Title IX awards. In the case of a student complaint, the court may award money damages to cover such things as pain and suffering, emotional distress, attorney's fees, and the cost of past, present and future therapy. The court may also require the school district or university to initiate or change its policy and develop training programs. It may also require the school district or university to waive various time limits for degree completion and/or provide tuition refunds.

In the case of an employee complaint, the court may require the school district or university to reinstate or promote the employee, pay back wages, etc. It may also award money damages to cover lost wages, attorney fees and therapy.

Consensual Relationships

The discussion of *quid pro quo* in the university setting raises questions regarding consensual sexual relationships and is the focus of much debate. Sexual activity between two consenting adults is not specifically prohibited by either Title VII nor Title IX. Although not illegal in the workplace, a number of universities are developing policies that attempt to regulate such behavior when it occurs between a faculty member and a student.

As early as 1971 courts began to acknowledge that there were inherent problems associated with professor-student sexual relationships. In the case of *Board of Trustees v. Stubblefield*[19] the court recognized that, "Certain professions...impose upon persons attracted to them, responsibilities and limitations on freedom of action which do not exist in regard to other callings. Public officials such as ...school teachers fall into such a category." This court went on to say that, "The integrity of the educational system under which teachers wield considerable power in the grading of students and the granting or withholding of certificates and diplomas is clearly threatened when teachers become involved in relationships with students."

In 1984, the Seventh Circuit indicated that when determining if a professor had engaged in sexual harassment the "conduct is not to be viewed in the same context as would conduct of an ordinary 'person on the street.' Rather, it must be judged in the context of the relationship existing between a professor and his students within an academic environment. University professors occupy an important place in our society and have concomitant ethical obligations."[20]

Zalk, Dederich & Paludi correctly identified the bottom line as one of power, "...the faculty members have it and the student does not."[21] This power imbalance must be kept in mind when discussing amorous relationship policies because even with the consent of both parties may be damaging to the educational process. The stated purpose of consensual relationship policies is to protect students and junior faculty members from being exploited by senior faculty members. These policies attempt to ensure that grading policies are fair and that students are not coerced into sexual relationships. The American Association of University Professors (AAUP) cautions faculty members and staff against entering romantic or sexual relationships with their students. They also warn supervisors against entering such relationships with an employee. "Faculty and staff should be cautious in assuming professional responsibilities for those with whom they have an existing romantic relationship."[22]

The policies that seem to generate the least controversy, and provide the least protection from abuse, are those that are advisory in nature. These policies simply suggest that faculty

and students not become romantically involved. A few require that those faculty members or staff engaged in romantic relationships with someone for whom they have professional responsibility must report the relationship to their superior so that an alternate means of performing the professional responsibility can be devised. A more controversial policy is one that prohibits sexual relationships between faculty and those over whom they have grading authority.

The policies that include a broad prohibition on sex between faculty and students generate the most controversy. These policies provide a great amount of protection to students and protect the integrity of the grading system. However, some argue that they are too stringent and substantially interfere with the right of people to become romantically involved with the person of their choice. Those who argue against such policies raise issues of individual rights to privacy, freedom of association, and the civil right to engage in intimate relationships without governmental interference. Keller and others argue that "outside the instructional context, the presumption that an intimate faculty-student relationship results from coercion cannot be justified."[23] The policy generated the most debate is the one adopted by the board of trustees of Antioch College, Yellow Springs, Ohio. Their policy declares that sexual relations between faculty and students are unacceptable and constitute professional misconduct.

Because of the special relationship between the university and the student, universities have a duty to protect students from sexual abuse by faculty members. Consensual relationships between faculty members and students or between senior faculty and junior faculty or between supervisors and subordinates present potential problems for the university. These relations may be based on mutual attraction, however these people often do not hold equal positions of power. If and when the relationship ends there may be charges of coercion, intimidation or blackmail.

Consensual relationships also raise the issue of fairness. If a consensual relationship exists between a professor and one of his or her students, it is reasonable for other students to wonder if their grade is dependent on their personal relationship with the professor. It is also likely that the student involved in the relationship may come to question his or her own academic abilities. Universities may want to explore the possibility of developing policies covering consensual relationships. Absent such policies, it is unlikely that the university will be able to discipline a faculty member for entering into a consensual relationship.

The Concept of Welcomeness

In the *Meritor* decision, the U.S. Supreme Court ruled that sexual harassment violates Title VII if it creates a hostile or offensive environment for the victim, regardless of whether it threatened the individual's job. Although the *Meritor* decision was based on Title VII, Title IX cases will likely follow the same judicial reasoning. In the educational setting, this means that in addition to faculty-to-student sexual harassment, student-to-student initiated unwelcome sexual advances, requests for sexual favors, and other verbal or physical conduct of a sexual nature may constitute sexual harassment. This is an unsettled area, with some courts stating that schools are responsible for the actions of third parties and other circuits stating that schools are not responsible for the action of third parties. It must be noted that unwelcome sexual attention toward a faculty member by a student is also sexual harassment.

Remarks that simply offend a person's feelings are usually not considered to be sexual harassment. However, if the offending behavior is severe or pervasive enough to actually affect a student's educational environment, then it may be sexual harassment. In this context there is a clear difference between welcome and voluntary. For example, even if an alleged victim agreed to participate in sexual intimacy, the sexual advances are a prohibited form of sexual harassment if it is clear that the victim did not desire to have the sexual relationship, but capitulated under pressure.

Because the 1980 EEOC guidelines do not define "unwelcome," we must look to various court cases in order to understand the difference between a voluntary activity and a welcome activity. In the *Meritor* case the victim claimed that she initially refused the sexual advances of her supervisor, but she eventually gave in and engaged in sexual intercourse out of fear of losing her job. The Supreme Court ruled that her participation in a sexual relationship did not establish that the relationship was truly consensual or welcome. The Court ruled that "the fact that the sex-related conduct was voluntary, in the sense that the complainant was not forced to participate against her will, is not a defense to a sexual harassment suit brought under Title VII." Challenged conduct must be unwelcome in the sense that the employee did not solicit or incite it, and in the sense that the employee regarded the conduct as undesirable or offensive.

Rights of Those Accused of Sexual Harassment

Schools and universities have an affirmative duty to ensure a safe environment to learn and work. Sexual harassment seriously interferes with a victim by discriminating against him or her on the basis of sex. However, as with most personnel issues, there are substantive and procedural due process rights that must be protected. As schools and universities promulgate and enforce policies prohibiting sexual harassment they must ensure that the rights of both the alleged victim and the alleged harasser are protected. In a number of cases involving charges of sexual harassment, sanctions against the alleged harasser have been called into question because either the policy, or the process of investigation, or the type of sanction violated either a contractual or due process right.[24]

The Intersection of Sexual Harassment and Academic Freedom[25]

Any effort to regulate the speech of students or professors must consider how to distinguish sexual harassment from

speech protected by the First Amendment. Most incidents of *quid pro quo* sexual harassment deal with the conduct of the alleged harasser. However, many incidents of hostile environment sexual harassment deal with speech that in another context may not be seen as not obscene, defamatory, "fighting" words or otherwise disruptive. However, speech not involving vandalism or "fighting words" present a more difficult problems for university officials. MacKinnon and Dworkin content that sexist speech is not protected in the workplace.[26] They claim that those who protect such speech "value speech in the abstract." Content, form, context, and effect are the critical issues to assist the university in determining what constitutes sexual harassment. The American Association of University Professors interprets academic freedom to mean that "[The] teacher is entitled to full freedom in research and in the publication of results."[27]

To determine if a hostile working environment exists, the US Supreme Court in *Harris v Forklift Systems* said the test is whether the conduct in question is severe or pervasive enough that: a reasonable person would find it created an objectively hostile or abusive work environment that altered the conditions of the victim's employment, and the victim perceives that the environment is abusive According to the *Harris* Court , if the workplace is permeated with discriminatory intimidation, ridicule, and insult that is sufficiently severe or pervasive to alter the conditions of the victim's employment, actionable sexual harassment has occurred. This court went on to say that conduct that alters work conditions includes that which detracts from employees' job performance, discourages employees from remaining on the job, or keeps them from advancing in their careers.

Conduct that is merely offensive, such as the mere utterance of an epithet which engenders offensive feelings in an employee, is not actionable sexual harassment. According to the *Harris* no one single factor must be present to find actionable abusive or hostile environment workplace sexual harassment. Such harassment can only be determined by looking at surrounding circumstances such as: a) The frequency of the discriminatory conduct, b) its severity, c) whether it is physically threatening or humiliating, or a mere offensive utterance, d) whether it unreasonably interferes with an employee's work performance, and e) the effect on the employee's psychological well-being, which is relevant to whether the victim actually found the environment abusive.

In examining questions of academic freedom in the classroom it must be remembered that academic freedom does not protect classroom speech that is unrelated to the subject matter at variance with the prescribed curriculum, or in violation of federal or state anti-discrimination laws. Such speech can be the reason for discipline or termination.[28] Further, speech that disrupts the educational environment is not protected by academic freedom. Academic freedom is not a valid defense for non-cooperative and aggressive behavior. An institution can discipline a faculty member for such actions.[29] Academic freedom is also not a license for activity at variance with job-related procedures and requirements, nor does it encompass activities which are internally destructive to the proper function of the university or disruptive to the education program.[30]

In the case of an investigation by the EEOC, the university does not enjoy a special privilege, grounded in the First amendment right of academic freedom, to prevent the EEOC, from having access to confidential peer review materials.[31] The EEOC and other governmental agencies may regulate First Amendment Rights if they can demonstrate a compelling governmental interest to do so.[32] And the U.S. Supreme Court has previously determined that the elimination of sex discrimination, of which sexual harassment is a subset, is a compelling governmental interest.[33]

In a widely reported decision discussing academic freedom and sexual harassment allegations, a federal district court judge ruled in favor of a tenured professor on a motion for a preliminary injunction and enjoined a public university from suspending him for his sexually laden lecture comments that had triggered complaints from female students.[34] The *Silva* Court cited with approval the test in *Mailloux v Kiley*,[35] for determining the validity of governmental regulation affecting a teacher's classroom speech. *Mailloux* said that free speech does not grant teachers a license to say or write in class whatever they may feel like and that the propriety of regulations or sanctions must depend on such circumstances as: a) the age and sophistication of the students, b) the relationship between teaching method and valid educational objective, and c) the context and manner of presentation.

Because the students in the *Silva* case were exclusively adult college students, the court ruled that the classroom statements advanced the valid educational objective of conveying certain principles related to the subject matter of the course, and they were made in a professionally appropriate manner as part of the college class lecture. The court further found that the University's sexual harassment policy was not reasonably related to the legitimate pedagogical purpose of providing a congenial academic environment because it employed an impermissible subjective standard that failed to take into account the nation's interest in academic freedom.

Defenses Against Charges of Sexual Harassment

Defenses against charges of sexual harassment that have been successful: 1) no harassment occurred, 2) any advances that took place were solicited, incited or encouraged, 3) the harassment was not sufficiently severe or pervasive to alter the conditions of employment and create an abusive environment. Schools and universities are expected to eliminate sexual harassment if they knew or should have know of its existence. Some universities have argued that they had no knowledge of the harassment and there was a grievance avenue for claims. Another defense used is that they took prompt remedial action as soon as they learned of the situation.

Conclusion

Society and the courts are asking school and university officials to balance the claims of freedom and responsibility on the campus. The break down of civility in our society is a trend that is evident at all levels of education. Abusive language, sexual misconduct and sexual assault are occur-

ring more and more frequently. Sex discrimination, although diminishing, still persists.

The existence of sexual harassment on campus undermines the integrity of education. I do not wish to suggest that schools and universities have been unresponsive to the new realities of sexual harassment. Many institutions have, in recent years, made serious efforts to respond to these questions. Many are shaping new codes of conduct. However much needs to be done before schools and universities reestablish an environment of courtesy and civility necessary in order for learning to take place.

All schools and universities must make preventing sexual harassment a high priority. The first step in this process is to ensure that their is a clear written policy stating that sexual harassment will not be tolerated, that all students and employees have the right to study and work free of fear, intimidation and harassment. In addition to defining sexual harassment these policies must define the rights of the victims and accused. All employees and students must know what their options are if they perceive that they have been sexually harassed. There also must be a well designed grievance procedure that will deal with faculty and student misconduct. Schools and universities must ensure adequate training takes place so that all employees and students know and understand the policy. Prompt and through investigating protocols must be in place and investigators must be adequately trained.

Endnotes

[1] This article is the text of a speech presented to the Mid-West Education Research Association in October of 1997. © 1997 Robert J. Shoop.

[2] According to a report by the United Educators' Insurance Risk Retention Group the number of sexual harassment claims brought against colleges they insure has approximately tripled over the past three years. (Neary, C.B. {1994}. Unique issues in sexual harassment litigation, Annual conference of National Association of College and University Attorneys. Stokes, J.D. and Vinik, D.F., in Consensual sexual relations between faculty and student in higher education, 96 Ed. Law Rep. [889] (March 23, 1995), report that "survey's conducted in the 1980's found that anywhere from 10% to 33% of female students at a number of campuses believed they had been subjected to sexual harassment at some time during their college careers.

[3] *Williams v. Saxbe*, 413 F. Supp. 645 (D.D.C. 1976).

[4] 120 S.Ct. 1028, (1992).

[5] Farley, Lin, (1980). *Sexual Shakedown*, Warner Books, New York, N.Y., see also Sandler, Bernice, *Important Events in the History of Sexual Harassment in Education*, in About Women on Campus, Vol 3, No. 2,Spring 1994, at 5.

[6] 477 U.S. 57 (1986).

[7] 114 S.Ct. 367 (November 9, 1993).

[8] Teresa Harris was a rental manager at Forklift Systems. Harris proved in the trial court that Charles Hardy, the company's president, targeted her with unwanted sexual and gender related comments throughout her employment. Harris quit and sued Forklift for sexual harassment under Title VII of the Civil Rights Act of 1994. Forklift systems argued that she left work for other reasons. The Tennessee trial court ruled in favor of Forklift Systems because Harris did not show serious injury to her psychological well-being. The Sixth Court of Appeals agreed. The Supreme Court reversed the lower court decision.

[9] 477 U.S. 57 (1986).

[10] *Harris*, 114 S.Ct. at 371.

[11] The popular interpretation of the addition of "sex" to Title VII is that it was the result of a deliberate ploy of foes of the bill to scuttle it. An alternative explanation is that this inclusion is a typical example of "incubated" legislation. For an extensive analysis of the over forty year process of seeking equal rights for women see: Freman, J., (1991) How Sex Got Into Title VII: Persistent Opportunism as a Maker of Public Policy, Law and Inequality: A Journal of Theory and Practice, Vol. 9, No. 2, March 1991, pp. 163-184.

[12] Material regarding EEOC was drawn from EEOC documents that are in the public domain. Information on all EEOC-enforced laws may be obtained by calling toll free on 800-669-EEOC.

[13] *See* Lipsett v. University of Pittsburgh, 864 F.2d 881, 897 (1st Cir. 1988), O'Connor v. Peru State College, 781 F.2d 632, 642 n. 8 (8th Cir. 1986), Doe v. Petaluma City Sch. Dist., 830 F. Supp. 1560, 1571-72 (N.D. Cal. 1993), and Nagel v. Avon Bd. of Educ., 575 F. Supp. 105, 106 (D. Conn. 1983).

[14] 631 F.2d 178 (2d Cir. 1980).

[15] See *Moire v. Temple University of Medicine*, 613 F. Supp. 1360 (E.D. Pa. 1985), aff'd 800 F.2d 1136 (3d Cir. 1986) and *Lipsett v. University of Puerto Rico*, 864 Fd 881 (1st Cir. 1988).

[16] 112 S.Ct. 1028 (1992).

[17] http://www.ed.gov/offices/OCR/peers.txt

[18] http://Ww.Ed.Gov/Offices/Ocr/Ocrpubs.Html

[19] 16 Cal. App. 3d 820, 824-27 (1971).

[20] Korf v. Ball State University, 726 F.2d 1222 (7th Cir. 1984).

[21] Zalk, R., Dederich, J. & Paludi, M. (1991). "Women Students' Assessment of Consensual Relationships With Their Professors: Ivory Power Reconsidered." In Academic and Workplace Sexual Harassment: A Resource Manual, edited by M.A. Paludi & R.B. Barickman, 99-111. Albany: State University of New York Press.

[22] AMERICAN ASSOCIATION OF UNIVERSITY PROFESSORS, *Sexual Harassment: Suggested Policy and Procedures for Handling Complaints, in* AAUP POLICY DOCUMENTS & REPORTS 113, 133 (1990).

[23] Keller, E.A. (1988) "Consensual Amorous Relationships Between Faculty and Students: The Constitutional Right To Privacy." Journal of College and University Law 15: 21-42.

[24] See "Jury Ignores Judge to Set Award in Suit," New York Times, July 24, 1994.

[25] The legal research and concept development in this section is derived from Elsa Kircher Cole's speech entitled "The Intersection of Sexual Harassment and Academic Freedom." The speech was presented to the Association of Governing Boards of Universities and Colleges, March 25, 1995, Seattle, WA. (used with permission.)

[26] MacKinnon, C.A., (1987) Feminism Unmodified: Discourses on Life and Law, and Dworkin, A., (1981) Pornography: Men Possessing Women.

[27] *AAUP Bulletin*, Vol. 60, No. 2, 269-72 (Summer 1974).

[28] *Clark v Holmes*, 474 F2d 292 (7th Cir 1972); *Hetrick v Martin*, 480 F2d 705 (6th Cir 1973).

[29] *Harden v Adams*, 760 Fd 1158 (11th Cir 1985); *Kelleher v Flawn*, 761 F2d 1079 (1985); *Adamian v Jacobsen*, 523 F2d 929 (9th Cir 1975); *Chitwood v Feaster*, 468 F2d 359 (4th Cir 1972); *Jawa v Fayetteville State Univ*, 426 F Supp 118 (EDNC 1976).

[30] *Statsny v Bd of Trustees of Central Washington Univ*, 647 P2d 496, 32 Wash App 239 (1982).

[31] *Univ. of Pennsylvania v Equal Employment Opportunity Commission*, 110 S. Ct 557 (1990).

[32] *United States v Lee*, 455 US 252 (1982).

[33] *Board of Directors of Rotary Int'l v Rotary Club*, 481 US 537, 549 (1987).

[34] *Silva v University of New Hampshire*, 1994 WL 504417 (DNH 1994), (The case settled by reinstating professor, no appeal).

[35] 448 F 2d 1242 (1st Cir 1972).

Presentation by Gloria Smith

Kim Metcalf, new President

Conference Highlights

Mid-Western Educational Research Association 1997 Conference

Thomas S. Parish, Program Chair
Kansas State University

Well, the 1997 MWERA Convention is now a part of history. The task that remains is for the highlights of the meeting to be shared in this short article. Sounds simple, but it really isn't. You see, the 1997 MWERA Meeting was very, very special to me because of the opportunity I had to work closely with so many of you, and for that reason I would like to share some of my thoughts with you regarding what I saw, heard, and felt.

To begin with, each of the division chairs worked diligently in order to set up their respective portions of the program. I cannot say enough about their devotion to seeing their tasks through to completion, and how well they worked with me to bring the convention program together. I was so positively impressed with their combined efforts that I dedicated the 1997 MWERA Book of Abstracts to them in an attempt to recognize them and their endeavors toward making the annual meeting a great success.

Others, too, made great efforts to make our annual meeting successful. First, and foremost, was Jean Pierce, the Executive Officer. How fortunate we are to have someone like her who is so personable, patient, and poised. Throughout the months of preparation for the meeting, and during the meeting itself, she continually maintained a friendly and kind demeanor. Truly, she deserves to be thanked for her endless good deeds on everyone's behalf.

Unfortunately, space will not permit me to acknowledge everyone's gracious contributions, but I must say that the annual meeting's success could not have been possible without the efforts of Sharon McNeely, Adria Karl-Weiss, Kim Metcalf, and Linda Bakkan. Each of these individuals went well beyond their call of duty when it came to helping organize and coordinate our annual meeting that was once again held at the Holiday Inn at the Mart Plaza in Chicago, Illinois.

The 1997 Annual Meeting of the Mid-Western Educational Research Association deserves many accolades, and for many reasons. First of all, it had some really wonderful invited speakers. For instance, three noted educational scholars shared their respective insights with those in attendance at this year's meeting. Dr. Robert Shoop provided helpful hints regarding how to prevent sexual harassment and things we can do in order to avoid being sexually harassed, while Dr. Jack Levin discussed the growing concern over violence in every segment of our society, including our schools. Dr. James Boyer then shared his view of our nation's demographic future, and how research efforts need to be adjusted so that they will more likely correspond with the changes occurring in our society. All three invited speakers were very well received, and all three speakers indicated to me that they were equally well pleased with the members' receptivity to their remarks.

James Boyer, Featured Speaker

Robert Shoop & Jack Levin, Featured Speakers

1207

(Photos by Ayres D'Costa & Tom Andre)

Besides the Association's invited speakers, many of the divisions invited speakers too. Division A, for instance, had two invited speakers. Dr. Theodore Kowalski spoke on the need for enhancing communication skills in the context of school reform, while Dr. Paul Baker discussed the leadership challenge associated with various school reform issues. Regarding other divisions' invited speakers, Division J had Molly Baker examine the technology currently in use in higher education, while Division E had Gloria Smith discuss ways to foster more multi cultural perspectives within education today. Finally, Division D had Dr. James Impara describe ways to set standards through using Angoff's method. Though each of these presentations were generally directed at specific divisional foci, it certainly seemed that all who attended these sessions came away with what they wanted, whether or not they were members of the respective divisions.

In addition to various notable invited speakers, the 1997 MWERA's annual conference offered various special sessions that the membership could also attend. For instance, Dr. Jean Pierce pulled together two highly revered professional panels in order to consider two key issues in education today, i.e., (1) the effects of educational policies upon the motivation of teachers and students, and (2) ways of forming collaborative partnerships among teachers and researchers. In addition, other special sessions offered various options ranging from meeting with the editors of the *Mid-Western Educational Researcher* to ways that playing cards could be used in the teaching of statistics.

MWERA's 1997 Annual Conference was further benefitted by other features too. For instance, the round table presentations seemed to be very well attended, and certainly provided researchers with ample opportunities to explain their findings to interested individuals via this highly interactive format. Furthermore, there were certain intangibles that must be cited too. Specifically, it seemed as though everyone really enjoyed the sessions they attended, and also enjoyed being with one another. In fact, it seemed to me that this was more like a family reunion in some respects because of the pleasantness that seemed to prevail among those who were in attendance at the meeting. Having been to meetings that were highly critical and seemed to detract from its presenters, I was greatly pleased that this was not the case at our conference. Yes, everyone seemed to help or share with one another, and that was an incredible plus for me. So much so, that I will never forget how much I enjoyed being at this meeting, and I am already eager to attend the next one in 1998.

Incidentally, be sure that you make your reservations at the Holiday Inn-Mart Plaza before the deadline next year since many members are bringing their families and friends with them (in order to attend our meeting and/or enjoy the sights associated with Chicago's loop). Consequently, space may once again be very difficult to find once the allotted rooms are assigned. So start planning now to join us, and don't be late, because our meeting is sure to be great in '98. The bottom line, of course, is that "U" are very important to US. In fact, we can't even be S_CCESSF_L without "U". So contact Dr. Jeffrey B. Hecht at Campus Box 5900, Illinois State University, Normal, Illinois 61790-5900, if you would like to be involved in any way with next year's exciting MWERA Conference. Jeff is the new Vice President of the association, and will personally direct the development of next year's program.

Greg Marchant, Past President, & Sharon McNeely, Outgoing President

Tom Parish, Conference Chair

Jeff Hecht, 1998 Conference Chair

President's Report

Kim K. Metcalf
Indiana University

On behalf of the officers and Board of Directors of MWERA, let me wish you a happy and safe 1998. I hope that this finds each of you well into a productive and rewarding academic year.

As many of you know, MWERA is in the midst of a period of necessary change. Our colleagues and predecessors have done a remarkable job of guiding us in 25 years of tremendous growth. Through their wisdom we are undoubtedly among the largest and most active regional professional organizations associated with AERA. For most of us, our professional "roots" were established through MWERA early in our careers or in graduate school. Personally, I clearly remember my first MWERA conference as a graduate student. The thought of presenting my own work to a group of colleagues, many of whom were among those whose works I had read in my studies, was incredibly intimidating. However, from the moment I arrived at the memorable Bismark, I was struck by the hospitality and support I felt. In fact, it was at this and future MWERA conferences that I first began to get to know my more experienced colleagues and mentors not just as scholars, but as people and friends.

It has been this environment of professional and personal support that has helped MWERA grow and thrive over the years. And, I would argue, it is this environment that can enable us to continue to thrive as an active, valuable professional organization. However, our task is perhaps more difficult now than ever before. Our universities and employers continue to reduce the support they provide for professional conference travel; graduate students and early career faculty are forced to make difficult choices about the professional organizations they will join; and the professional benefits of conference participation are valued less and less in the merit, promotion and tenure process. Thus, while we are confident of the quality of our organization and of the professional and personal benefits it can have, it is imperative that we work harder than ever to inform our non-members of the benefits of MWERA membership and participation.

As an organization, we have emphasized the very reasonable cost of MWERA membership and of our annual meeting, particularly for graduate students. Certainly, there are few if any professional organizations that can boast of such low membership costs. But at a time when our students and early career colleagues are forced to choose to participate in only a small few of the many professional organizations that they might, we absolutely must ensure that MWERA is not only inexpensive, but a good investment in their professional future. We offer our early career colleagues a variety of professional opportunities that they are unlikely to be afforded through most other professional organizations: an open, accessible, and supportive annual conference, publication opportunities in our regional journal, almost immediate opportunities for becoming formally involved in the organization through the journal, the conference, and the executive committee, and a small, close-knit network of established and emerging scholars throughout the midwest and Canada.

In spite of our amazingly affordable dues and the professional value we can offer, these attributes only draw new members when our colleagues and students are aware of them. I am confident that each of us believes strongly in the value of our organization. We each have our own reasons, but we share a commitment to and love of MWERA. But, I wonder if we may mistakenly take for granted that others will see the value of MWERA participation as easily as we do. For students and colleagues who are not familiar with MWERA, it may be easy to assume that their limited professional time and energy may be more efficiently invested in one of the many other organizations to which they are invited. It is up to us, those who know MWERA and who are committed to its continued success, to make the personal contact with our colleagues that can help them see the value of the organization.

During the coming year, I challenge each of us strive to promote MWERA in two ways. First, let us explicitly work to make known to our students and colleagues the important and unique benefits that MWERA membership can provide them. Let's help them see the opportunities for presenting, publishing, networking, and participating that we can provide, but that few other professional organizations can. Second, let us realize that we are no longer a small group of well acquainted friends who assume the value of our organization, who meet each year as much for social as for professional reasons. In order to remain viable, we must accept that our future depends on the long-term and active participation of young scholars who work in a rapidly changing, ever more competitive professional context. While maintaining the supportive, nurturing environment MWERA is known for, let us continue to improve the stature, visibility, and integrity of MWERA. Doing so will allow another MWERA to experience another 25 years of growth and success and allow another generation of scholars to experience the same feelings of collegiality and pride that we have felt as members of MWERA.

1209

Mid-Western Educational Research Association
1998 Annual Meeting Call for Proposals

PROPOSAL DEADLINE: APRIL 1, 1998

October 14 - 17, 1998
Holiday Inn Mart Plaza, Chicago, IL

Jeffrey B. Hecht, Program Chair
http://tierlab.ilstu.edu/MWERA-98

The 1998 Annual Meeting of the Mid-Western Educational Research Association (MWERA) will return to Chicago with an exciting program of invited speakers, focused workshops, peer-reviewed papers presented in a variety of session formats, and activities for participants and their families. The 1998 program will feature speakers of interest to anyone involved in education, with talks and follow-up small-group discussions that are sure to engage and energize. Workshops will be scheduled throughout the four-day meeting, allowing attendees to participate in a wide range of focused, longer-term sessions on a variety of interesting topics. Peer-reviewed papers continue to form the backbone of the 1998 conference, with authors/presenters encouraged to consider a variety of presentation formats: traditional *Paper Presentation* (3-5 papers per session with a Session Chair and a Session Discussant), *Roundtable Discussion/Poster* (for heightened presenter-attendee interaction), *Symposium* (focusing on specific topics from a variety of perspectives), *Workshop* (longer-term focused work on a topic of interest), or *Alternative Format* (with a range of different time lengths and interactive activities).This year's meeting returns to Chicago's Holiday Inn Mart Plaza featuring spacious, comfortable guest rooms, excellent meeting facilities, an indoor pool and exercise room, and many shops and restaurants within a short, safe walk of the hotel. Chicago's museums, planetarium and aquarium, theater district, and lively night life are also just minutes from our central hotel location!

Please accept this invitation to participate in the 1998 Annual Meeting!

The Mid-Western Educational Research Association offers scholars and practitioners, researchers and instructors, and educators from all levels and perspectives an opportunity to share ideas with others in a supportive environment of collaboration. The MWERA meeting is where people from all over North America come to hear the latest in educational thought and progress, and to make new contacts and renew existing acquaintances, in a spirit of professional friendship and collegiality!

1210

General Information

The 1998 MWERA Annual Meeting will be held **Wednesday, October 14 through Saturday, October 17,** at the Holiday Inn Mart Plaza in Chicago, Illinois. The program will consist primarily of presentations, selected through a peer review process, by divisional program chairpersons. In addition, there will be invited speakers and symposia, panel discussions, special sessions for graduate students and new faculty, a luncheon and other social events open to all attendees.

Proposals may be submitted either on paper, or electronically over the World Wide Web. All proposals submitted on paper must be sent only to the Program Chair at the address given below, and must follow the *Guidelines for Submitting a Proposal* in this booklet. Questions about a proposal or the meeting, whether submitted on paper or electronically, should also be directed to the Program Chair:

Dr. Jeffrey B. Hecht
MWERA-98 Program Chair
Campus Box 5900
Illinois State University
Normal, Illinois 61790-5900

Office: (309) 438-5585
e-mail: MWERA-98@ilstu.edu

Electronic proposals must be submitted using the form available on the meeting Web site. Proposals e-mailed to the Program Chair will not be processed. Further, each proposal should only be submitted once in one format, electronic or paper. Specific instructions for electronic submission can be found at the meeting web site:

http://tierlab.ilstu.edu/MWERA-98

Any educational professional may submit a proposal for MWERA-98, whether or not that person is currently a member of MWERA. *All Annual Meeting presenters must be members in good standing of MWERA (non-members must join MWERA upon notification of proposal acceptance).* To promote broader participation in the program no one person should appear as a presenter on more than three proposals.

All proposals, regardless of submission format (electronic or paper), must be received by the Program Chair no later than the deadline of **April 1, 1998**. All proposals will then be sent to the appropriate Division Chair, each of whom coordinate a number of volunteers in a system of blind (without author identification) review. Appropriate criteria, depending on the format and type of scholarly work being presented, have been developed and are used for the review process. These criteria include: (a) topic (originality, choice of problem, importance of issues); (b) relevance of topic to the Division and MWERA membership; (c) contribution to research and education; (d) framework (theoretical/conceptual/practical, rationale, literature review, grounding); (e) analyses and interpretations (significance, implications, relationship of conclusions to findings, generalizability or usefulness); and (f) overall written proposal quality (clarity of writing, logic, and organization).

Papers presented at MWERA are expected to present original scholarship, conducted by the author(s), which has not been previously presented at any other meeting or published in any journal. Further, it is a violation of MWERA policy to promote commercially available products or services (except as Exhibits) which go beyond the limits of appropriate scholarly/scientific communication. Individuals who wish to display educationally related products or services are encouraged to contact Dr. Sharon McNeely, Assistant Program Chair for Exhibits, P. O. Box 34421, Chicago, Illinois 60634, (913) 794-2788.

All persons presenting at the 1998 Annual Meeting are expected to register for the full meeting. All sessions listed in the program will be open to any registered meeting participant; however, enrollment may be limited, and a small additional fee required, for some Workshop sessions. Tickets for the Friday luncheon and speaker are available to all pre-registrants. *Ticket availability is not guaranteed for late and on-site registrants.* Registration materials for the 1998 Annual Meeting will be published in the *Mid-Western Educational Researcher*, on the Web site, and can be obtained by contacting the Program Chair.

Presenters whose papers have been accepted to a session with a Session Chair and/or Session Discussant are responsible for submitting a completed version of their conference paper to the Session Chair and Discussant no later than September 1, 1998. *Papers not available to the Session Chair and Session Discussant may be dropped from the program.* Presenters must also provide complete copies of their papers (or detailed handouts) to attendees at their sessions. Overhead projectors and screens will be provided by MWERA in most presentation rooms. Presenters needing additional A/V equipment are responsible for arranging such with the hotel at the presenter's own additional expense.

MWERA reserves the right to reproduce and distribute summaries and abstracts of all accepted proposals, including making such works available in a printed Program Abstract, through the meeting's World Wide Web site, and in press releases promoting the Annual Meeting and the organization. *As a condition of acceptance all authors of papers accepted to the 1998 Annual Meeting explicitly grant MWERA the right to reproduce their work's summary and/or abstract in these ways.* Such limited distribution does not preclude any subsequent publication of the work by the author(s).

Authors of accepted proposals assume the ethical and professional responsibility to appear at the Annual Meeting and to participate in their presentation or assigned session. When circumstances preclude the author(s) from doing so, it is the responsibility of the author to arrange a suitable substitute and to notify the Program Chair in advance.

Divisions

A - Administration and Leadership
This division is concerned with research, theory, development, and the improvement of practice in the organization and administration of education. The Sr. Chair of Division A is James K. Walter from Texas A&M University - Corpus Christi, and the Jr. Chair is Larry McNeal from Illinois State University.

B - Curriculum Studies
This division is concerned with curriculum and instructional practice, theory, and research. The Sr. Chair of Division B is James H. Powell from Ball State University, and the Jr. Chair is Jay Thompson from Ball State University.

C - Learning and Instruction
This division is concerned with theory and research on human abilities, learning styles, individual differences, problem solving, and other cognitive factors. The Sr. Chair of Division C is M Cecil Smith from Northern Illinois University.

D - Measurement and Research Methodology
This division is concerned with measurement, statistical methods, and research design applied to educational research. The Sr. Chair of Division D is James McCluskey from Central Michigan University, and the Jr. Chair is Larry Henricksen from Ball State University.

E - Counseling and Development
This division is concerned with the understanding of human development, special education, and the application and improvement of counseling theories, techniques, and training strategies. The Sr. Chair of Division E is Gabriella Coldwell from Illinois State University, and the Jr. is Eddie Glenn from Illinois State University.

F - History and Philosophy
This division is concerned with the findings and methodologies of historical research in education. The Sr. Chair of Division F is Beth Johnson from Eastern Michigan University, and the Jr. Chair is Louise Fleming from Ashland University.

G - Social Context of Education
This division is concerned with theory, practice, and research on social, moral, affective, and motivational characteristics and development, especially multi cultural perspectives. The Sr. Chair of Division G is Mary Ann Wham from the University of Wisconsin - Whitewater, and the Jr. Chair is Sue Lenski from Illinois State University.

H - School Evaluation and Program Development
This division is concerned with research and evaluation to improve school practice, including program planning and implementation. The Sr. Chair of Division H is Isadore Newman from the University of Akron.

I - Education in the Professions
This division is concerned with educational practice, research, and evaluation in the professions (e.g., medicine, nursing, public health, business, law, and engineering). The Sr. Chair of Division I is Gene Kramer from the American Dental Association, and the Jr. Chair is Richard M. Smith from Rehabilitation Foundation, Inc.

J - Postsecondary Education
This division is concerned with a broad range of issues related to two-year, four-year, and graduate education. The Sr. Chair of Division J is Margaret Simpson from the Northwestern University Medical School, and the Jr. Chair is Thomas J. Cody from Western Illinois University.

K - Teaching and Teacher Education
This division is concerned with theory, practice, and research related to teaching at all levels and in-service and pre-service teacher education, including field experience supervision and mentoring. The Sr. Chair of Division K is Connie Bowman from the University of Dayton, and the Jr. Chair is Maria Elena Galvez-Martin from The Ohio State University.

Important Dates

Proposal Submission Deadline	April 1, 1998
Notification of Acceptance	August 1, 1998
Papers to Session Chairs/Discussants	September 1, 1998
Meeting Registration and Hotel Reservations	September 15, 1998
MWERA 1998 Annual Meeting	October 14 - 17, 1998

Guidelines for Submitting a Proposal

Session Format Descriptions

Paper Presentation

Paper sessions are intended to allow presenters the opportunity to make short, relatively formal presentations in which they overview their papers to an audience. Three to five individual papers dealing with related topics are grouped into a single session running from 1.5 to 2 hours. The presenter(s) of each paper is(are) allowed approximately 15 minutes to present the highlights of the paper. A single Session Discussant is allowed approximately 15 minutes, following all papers, for comments and critical review. A Session Chair moderates the entire session. Presenters are expected to provide complete copies of their papers to all interested audience members.

Roundtable Discussion/Poster

Roundtable Discussion/Poster sessions are intended to provide opportunities for interested individuals to participate in a dialogue with other interested individuals and the presenter(s) of the paper. Presenters are provided a small table around which interested individuals can meet to discuss the paper. Presenters may elect to provide small, table-top poster-type displays, ancillary handouts, or other table-top A/V materials to augment their discussions. Interested individuals are free to move into and out of these discussions/posters as they wish. Presenters are expected to make available complete copies of the paper on which the roundtable discussion/poster was focused.

Symposium

A symposium is intended to provide an opportunity for examination of specific problems or topics from a variety of perspectives. Symposium organizers are expected to identify the topic or issue, identify and ensure the participation of individual speakers who will participate in the session, prepare any necessary materials for the symposium, and Chair the session. It is suggested, though not required, that the speakers or symposium organizer will provide interested individuals with one (or more) papers relevant to, reflective of, or drawn from the symposium.

Workshop

Workshops are intended to provide an extended period of time during which the workshop leader helps participants develop or improve their ability to perform some process (e.g. how to provide clinical supervision, using the latest features of the Internet, or conduct an advanced statistical analysis). Organizers may request from 1.5 to 3 hours, and are responsible for providing all necessary materials for participants. Many workshops are scheduled for Wednesday afternoon, although others may be scheduled throughout the conference. Organizers may, if they wish, receive an honorarium based upon the number of paid participants in their workshop and the fee schedule.

Alternative Session

The form, topics, and format of alternative sessions are limited only by the imagination and creativity of the organizer. These options are intended to afford the most effective method or approach to disseminating scholarly work of a variety of types. Proposals for alternative sessions will be evaluated on their appropriateness to the topic and audience, their suitability to meet the limitations of time, space, and expense for MWERA, and the basic quality or value of the topic. The organization of alternative sessions is responsible for all major participants or speakers, developing and providing any necessary materials, and conducting or mediating the session. Because a variety of approaches may be proposed within this category, alternative session proposals should include a brief rationale for the alternative being proposed.

Materials to be Submitted

The following materials list applies to proposals submitted on paper. Separate guidelines exist for electronically submitted proposals (see the Web site for details).

Proposal Cover Sheet

Six (6) copies typewritten with all items completed. Session descriptors must be chosen from the list of descriptors provided (see table to the right).

Summary

Six (6) copies of a two to three page summary for use in judging the merits of the proposal. Summaries can be single-spaced, but must be typed on 8.5" x 11" paper in no smaller than 10 point type using 1" margins. All copies of the summary should include the title of the proposed session in the upper left-hand corner of the first page. On three of the summaries only include the name of the presenter, with his or her complete mailing address, telephone and FAX, and e-mail, in the upper right hand corner of the first page. Proposals which do not meet these criteria may be refused by the Program Chair without review.

Summaries for **Paper** and **Roundtable Discussion/Poster** proposals should explicitly address as many of the following as appropriate, preferably in this order:

(a) Objectives, goals, or purposes;
(b) Perspective(s) and/or theoretical framework;
(c) Methods and/or techniques (data source, instruments, procedures);
(d) Results and conclusions; and
(e) Educational and/or scientific importance of the work.

Summaries for **Symposium**, **Workshop**, and **Alternative Session** proposals should explicitly address as many of the following as appropriate, preferably in this order:

(a) Descriptive title of the session;
(b) Objective, goals and purposes of the session;
(c) Importance of the topic, issue, or problem;
(d) Explanation of the basic format or structure of the session;
(e) Listing of the Presenter and Co-Presenter(s), with an explanation of each person's relevant background and role in the session;
(f) Anticipated audience and kind of audience involvement.

Abstract

Three (3) copies of a 100 - 150 word narrative abstract. The abstracts of accepted papers will be published the *MWERA 1998 Annual Meeting Abstracts* book, and will be available on the World Wide Web site. Abstracts must be typewritten, single-spaced, using a 12 point Arial or Times Roman font. Use clear, precise language which can be understood by readers outside your discipline. In the upper left hand corder of each abstract page type the title of the paper, and the name and institutional affiliations of each author.

Envelopes

Four (4) stamped, self-addressed, business size (#10) envelopes. These will be used to inform you of: (a) receipt of the proposal by the Program Chair; (b) the decision about your paper's acceptance; (c) your scheduled session time, Session Chair, and Session Discussant, and; (d) meeting registration and hotel reservation information.

Session Descriptors

Ability Grouping
Accountability
Accreditation
Achievement
Action Research
Adaptive Testing
Administration
Admissions
Adolescence
Adult Education/Development
Affective Education
Aging
Anthropology
Aptitude
Artificial Intelligence
Arts Education
Asian Education
Assessment
At-Risk Students
Attitude
Attribution
Bilingual/Bicultural
Black Education
Business Education
Career Development
Case Studies
Certification/Licensure
Child Development
Classroom Management
Classroom Research
Clinical Education
Cognition
Cognitive Processes/Develop
Collaboration
Community Colleges
Comparative Education
Compensatory Education
Comprehension
Computer Applications
Computerized Testing
Computers and Learning
Conceptual Change
Constructivism
Continuing Education
Cooperative Learning
Counseling
Counselor Training/Supervision
Critical Theory
Critical Thinking
Cross-Cultural Studies
Curriculum
Data Analysis
Decision Making
Demography
Desegregation
Differential Item Functioning
Dimensionality
Dropouts
Early Childhood
Economics of Education
Educational Policy
Educational Reform
Elementary Schools
Equating
Equity
Ethics
Ethnicity
Evaluation
Experimental Design
Facilities
Factor Analysis
Faculty Development
Family/Home Education
Finance
Gay/Lesbian Studies
Gender Studies
Generalizability Theory
Gifted Education
Governance
High Schools
Hispanic Education
History
Indian Education
Indicators/Information Systems
Individual Differences
Information Processing
Instructional Design/Development
Instructional Practices
Instructional Technology
Intelligence
International Education/Studies
Item Response Theory (IRT)
Language Comprehension/Devel
Language Processes
Law/Legal
Leadership
Learning Environments
Learning Processes/Strategies
Life-Span Development
Literacy
Literature
Mainstreaming
Mathematics Education
Measurement
Media
Medical Education
Memory
Mentoring
Meta-Analysis
Metacognition
Middle Schools
Military Education
Minorities
Moral Education/Development
Motivation
Museum Education
NAEP
Networking
Organization Theory/Change
Peer Interaction/Friendship
Performance Assessment
Philosophy
Physical Education
Planning
Politics
Postsecondary Education
Principals
Private Education
Problem Solving
Professional Development
Program Evaluation
Psychometrics
Qualitative Research
Race
Reading
Research Methodology
Research Utilization
Restructuring
Retention
Rural Education
School/Teacher Effectiveness
Science Education
Self-Concept
Social Class
Social Context
Social Processes/Development
Social Studies Education
Sociology
Special Education
Staff Development
Standard Setting
Statistics
Stress/Coping
Structural Modeling
Student Behavior/Attitude
Student Cognition
Student Knowledge
Student Teaching
Studying
Supervision
Survey Research
Teacher Assessment
Teacher Characteristics
Teacher Cognition
Teacher Education/Development
Teacher Knowledge
Teacher Research
Teaching Context
Technology
Testing
Test Theory/Development
Textbooks
Tutoring
Urban Education
Validity/Reliability
Vocabulary
Vocational Education
Women's Issues
Work
Writing

Proposal Submission Cover Sheet (All Session Types)
Mid-Western Educational Research Association 1998 Annual Meeting

Presenter's Name: _____
(First Name) (Middle Initial) (Last Name)

Affiliation: _____

Mailing Address: _____

_____

Telephone: ( ) _____ FAX: ( ) _____

E-mail: _____

Are you a member of MWERA? ❑ Yes ❑ No *(Reminder: If your proposal is accepted and you are not a member, you will need to join!)*

Are you a graduate student? ❑ Yes ❑ No *(Student presentations are automatically entered in the annual competition/prize contest!)*

Co-Presenter(s)/Co-Author(s) Name	Affiliation

Title of Submission: _____

_____

Division	Desired Session Type		Workshop Detail (Workshop Proposals Only)	Session Descriptors (From Prior Page Only)
	1st Choice	2nd Choice		
❑A ❑E ❑I	❑ Paper	❑ Paper	❑ 1 Hour Maximum	_____
❑B ❑F ❑J	❑ Roundtable	❑ Roundtable	❑ 1.5 Hours enrollment of	_____
❑C ❑G ❑K	❑ Symposium	❑ Symposium	❑ 2 Hours _____	
❑D ❑H	❑ Workshop	❑ Workshop	❑ 2.5 Hours persons at	
❑ Cross-List (indicate):	❑ Alternative Session	❑ Alternative Session	❑ 3 Hours $_____ per	_____
_____				

By submitting this proposal I hereby certify that: (1) this proposal has not been previously submitted to MWERA either on paper or in electronic form; (2) this submission has not been previously published or presented at any other professional meeting; and (3) if this submission is accepted and placed on the program I will register for the full MWERA-98 meeting, attend the conference, and deliver this presentation at the assigned date & time.

_____ _____
Signature of the Principal Presenter Date

Be certain to enclose all of the following material with your proposal:

Six (6) copies of this Proposal Submission Cover Sheet, typewritten, with all items completed
Six (6) copies of a two to three page Summary: three (3) copies with author information, three (3) copies without author information
Three (3) copies of a 100 - 150 work narrative Abstract, typewritten, in 12 point Arial or Times Roman font
Four (4) stamped, self-addressed, business size (#10) Envelopes

THE COMPLETE PROPOSAL SUBMISSION MUST BE RECEIVED BY THE PROGRAM CHAIR NO LATER THAN APRIL 1, 1998!

Keynote Address

Diversity Issues in Educational Research

James B. Boyer
Kansas State University

Educational research is an ongoing activity of many whose careers keep them in the center of the American academy—whether that academy is a defined research institution or at some other level. While much of the educational research conducted in the United States is associated with institutions of higher education, there is an increasing level of research activity being undertaken in other agencies as well. Also, many of the institutions of higher education are forming linkages with funding agencies (to include government agencies) and the results of their work will continue to influence public policy and the ultimate quality of life in all of America.

Much of the research undertaken by educational specialists in the past has attempted to adopt the traditional natural sciences approach to discovering new knowledge about humankind. In some ways, this is admirable, because some disciplines have been engaged in a particular design for generations. Most of us were socialized into the research community by something called the scientific method. However, our position raises questions about some of the research endeavors underway today. While we applaud the funding provided for this area of educational activity—and while are happy that agencies like the National Institute of Education and others are there to enhance research activity, we are concerned that the limitations placed on the broad area of educational research may provide data and images considered less useful and less accurate than some would view them.

If one of the major purposes of educational research is to improve the quality of life for all of us, then we place our priority with that purpose. Diversity issues in educational research means expanding the research dimensions, further analyzing the research assumptions, reviewing the research production teams, re-thinking the research consumption impact, and re-defining the parameters of our work as educational researchers.

Multicultural Transformation of Educational Research

What are the goals of multicultural research as we approach the 21st century? Why should the academy embrace multicultural research effort when the majority of the participants in the academy are not representative of the highly visible ethnically different populations? What ultimate effect will the research community have on the academy's image, purpose, and service function? Our position is that the academy (to include the research practitioners) must recognize the changing demographics of the United States and execute its leadership and service function with keen regard to the emerging presence of diversity.

Research activity must be reflective of the multicultural perspective so that it can more directly result in public policy which is more *inclusive*, and in human service which is more *culturally sensitive*. We continually call for research which underlies the quest for a society that is nonviolent, open, supportive, inclusive and diverse in its framework. We are urgently calling for research activity which is supportive of all humanity, if indeed, the application is going to be made for all humanity.

Research activity in the academy (especially for those of us who are identified as educational researchers)—must be more focused on ethnic identity, gender adequacy, an understanding of the necessity for economic sufficiency and a celebration of linguistic diversity. Gender adequacy involves understanding that neither gender is better than the other and that equality does not necessarily mean *sameness* or exact *duplication*. No one should have to make apologies for one's gender, ethnic identity, race, first language, economic profile, or handicapping condition as a participant in the research community or in the academy.

James Montford, Jr. (1990), writing in *Black Issues in Higher Education*, asserts that institutions must make a commitment to diversity at every level, particularly at the support programs level. He writes that "the mission of cultural diversity means the institutionalization of a cross-cultural perspective into curriculum, programs and services at the institution" (p. 64). Further, he insists that "it is incumbent upon all institutions of higher education to move forward with deliberate speed to develop draft proposals designed to address infusion of cross-cultural education into the very fabric of higher learning" (p.64).

Educational researchers, particularly those of us concerned with teaching and learning, with the experience of participation in the academy, and with the ultimate quality of life for all people—must now engage in that transformation. Such engagement means re-thinking our *perspective* on educational research.

To what extent can we continue to place almost all our research effort into one design, based on one general set of assumptions, and then attempt to apply that to *all* populations—whether they were included in the sample or not? Most professions base their practice on the best available research findings and educational practitioners are no different in this respect. The practice, however, can be no more *equitable* than the research activity on which it is based.

Expanding the Research Dimension

Multicultural concerns include the expanded definition and dimension of educational research. We support both quantitative and qualitative research efforts to provide greater insight into the academic endeavor. Further, we support a new look at the following categories that lend themselves to educational

research but which are rarely given serious attention by educational practitioners.

Historical research: That which builds a chronology of persons, groups, or issues not normally studied by educational researchers in the professional education research community. It makes ample use of the purposes of history—and some of the historical approaches to *Knowing* and discovering.

Descriptive research: That which defines a reality and offers findings which do not readily lend themselves to quantitative reporting though they may contribute much to professional understanding of teaching, learning and consumer issues.

Creative research: That which is the result of compositions in educational theatre, music, art, drama, photography, or other areas including poetry.

In addition to traditional experimental research activity, those categories may need to be employed or addressed far more frequently than before. If diversity is the fundamental base for educational effort, then it must also be part of the research paradigm and the broad practice.

Traditional experimental research designs have long had something of a monopoly on the conduct of educational research. In the future, as we transform the field of educational research, multicultural concerns will include friendly confrontations with the assumptions that historical, descriptive, or creative research designs have equal merit in attempting to generate new knowledge on which to base professional practice.

Additional Research Dimensions

There are several critical dimensions of multicultural education research which the research community (including action research teams in public schools) may need to embrace in order to remain a viable entity within the American academic framework for the twenty-first century. Boyer (1992) cited the following: (a) recognizing racial and ethnic identities, (b) understanding diversity, (c) multiple learning environments, (d) relation of issues to academic disciplines, (e) human rights, social justice, and choice, and (f) inclusion of diverse populations.

Add to these dimensions or concerns the continuing factors of policy, program, and procedures, and one realizes how critical it is for educational research to expand its parameters when discussing research production and research findings. There is agreement that those engaged in full-time educational research have provided the academic community with much data. That data guides the practice of those "on the front lines" of educational service delivery. No practice, however, can be more equitable than the research on which it is based.

The Research Paradigm for Diversity

Perhaps no area of the research community's function is more complex than the paradigm or parameters of our daily work in research activity. In the United States, we depend heavily on the academic research community for information about national policy and program direction. Diversity must become part of the foundational base on which our research work and discussions are built. Diversity, however, does not mean deficit. Diversity does not mean a stop-gap for racially motivated crisis. Diversity is not a benevolent act growing out of a slave-master mentality. Diversity is not a call just to add-on something that was never there before.

As we approach the twenty-first century, diversity means embracing the age of Multicultural, multi-ethnic understanding. It means the acceptance of "consumerism" and "academic reconstruction." While we have a spirit of self-direction, let's announce our own re-definition of research activity. Let's announce our new levels of self-reliance and allow others the chance to review our new levels of "research self-respect." We will no longer allow other disciplines to tell us what is *good research* or poor research activity, production, or consumption. While we must bring the problems of public schools to bear through our work, we must offer more functional solutions than we ever did before.

We all know that educational policy is made through the political process. That is not likely to change in the foreseeable future. However, we have the responsibility to understand the implications of that process in the educational research community. Researchers in the educational enterprise must have a *culture sense*—that is, insight into the dynamics of culture, programs, and feelings of social balance. What constitutes research? How will it be used? Which research functions and projects are worthy of the academy's seal and image? Who shall make these decisions? On what basis? Despite a tendency to favor research parameters of the past, a stronger level of *inclusion* must be part of our research dimensions and research definitions. What is the prevailing definition of educational research? Who created that definition? If educational research is designed to improve the quality of life for *all* people, then which people shall have a part in describing that improvement? All the people—including those who are culturally different from the masses—now require a more comprehensive definition.

Choice of Research Topics

As research topics are chosen by students and faculty, what types of topics are *encouraged*? Which are discouraged? To what extent are candidates encouraged to engage in research on issues of race, gender, ethnicity, bilingualism, and economic exploitation? In the sciences, to what extent are concerns about ethical issues investigated? How, for example, are decisions made about where toxic waste dumps are placed? Or which patients shall get organ replacements (transplants) in medical facilities? Academic research, while once much more limited, must now be deliberate in its concern for the diversity which questions imply. How are research topics chosen? With which populations in mind? Educational research must now become more responsive to the differences which help to define us.

The Research Production Team

Research production is both a science and an art. To what extent do researchers feel that all clients and potential researchers must *duplicate* the patterns and techniques of past research? Why must research in one area be acceptable to academicians in *all other* areas or categories of research activity? We can

never escape the powerful influence of the human perspective. Educational researchers must take the lead in expanding the range of topics, methods, and outcomes to reflect the expanded level of diversity in the United States.

Boyer (1986) identified a distinction between authentic researchers and basic researchers with implications for the entire field of research activity. A basic research team is one which does *not* include a person about whom the research is being conducted. In other words, if an African American research team which has no Caucasian persons on it attempts to conduct a study of Caucasian learners, this would be basic research.

Authentic research occurs only when the research team or principal investigator represents the profile of those being used as subjects in the research design. When Native American researchers study Native American students and their learning styles, for example, such persons bring insight to the task which others cannot bring. The Native American principal investigator brings not only research skills to the project, but also a lifetime of experience from that population to the research project.

Educational research has generally assumed that such factors are insignificant. The position taken here is that America is too diverse to have such factors continually ignored. To those who suggest that the presence of a Native American researcher on a research team "contaminates" the quest for objectivity in research, the premise of this is to proclaim that the *absence* of such a person is actually the "contaminating" factor. Perspective in research is extremely important. Authentic perspective is essential.

The Gate-Keeping Function of Refereed Journals

With the increasing diversity of the consuming public, one must ask the major questions of gate-keeping functions of refereed journals as the *only* acceptable level of dissemination. At the same time, traditional techniques may come under question. Are there more ways to conduct research and disseminate results than what we now presently know and depend upon?

While there may be value in the historical practice of blind reviews, there can also be flaws. Depending on the publication and the training, perspective, and inclinations of the editor, that which gets published may have all the trappings of monocultural, monoracial, poorly conceptualized definitions of what is academically respectable.

Diversity means the presence of cultural *difference*, not cultural warfare. It should be remembered that no one is deprived of culture! Often, what we see is a *variation* from what is traditionally known by those who are familiar with the activities of the educational research community.

Multicultural Concerns with Academic and Social Research

All academic and social research will reflect human preferences on methodology, design, and perspective. The very choices made in conceptualizing a research study emerge from the preferences and perspectives of those engaged in the study. All findings, then, are proportionately affected.

We see educational research as an arm of all academic and social research because of its heavy reliance on human beings and their mental, emotional, intellectual, and physical properties. Some time ago, legal parameters were created to protect subjects or learners from being unduly exploited in the conduct of research. We applaud such steps, but we are equally concerned with the research team composition, the topics chosen, the design of major projects, the dissemination of findings, and the seemingly vocal intent on re-stating the same negative descriptions of culturally different populations.

Research associations cannot continue to perpetuate the status quo when everything else associated with a multicultural, diverse population is changing. While the educational research community can be commended for production of new data, it leaves much to be desired in some areas of research which have been under-studied.

Historical Perspective on Multicultural Education

In the decade of the 1960s, much of the research produced which could be under the banner of diversity was growing out of America's efforts to *desegregate* its schools and other major institutions. Though embryonic in stage, its major assumptions were based on a compensatory model. That is, anyone who was culturally different was assumed to be abnormal, deficient, sub-standard, or negatively unique in some way. In describing economically poor populations, for instance, some of the research concluded that these learners were "culturally deprived." Little or no effort was made to find the *strengths* of these populations.

In the decade of the 1970s, there was a strong move on for "competency-based" research activity. The research in multicultural education in that decade was clearly embryonic—and a number of "profile studies" were completed. A profile study is one which describes a given population or a given academic or social reality. For example, some of that research focused on the "profile" of presidents of historically black colleges. It was done to establish a new realization of the academic appropriateness of such a population within the academy.

In the 1980s, much of the reform movement impacted multicultural research studies—and a clearer focus on the "institutionalization" of certain curriculum issues characterized multicultural research. Studies which attempted to look at exclusions from the general curriculum and from collegiate studies, were quite prominent.

In the 1990s, we are in the Age of Multicultural Understandings which gives greater attention (and respect) to the consumer. We have abandoned the "compensatory model" or philosophy and have embraced the idea of diversity in all of its dimensions. For example, Anne Butler's 1990 study, *A Content Analysis of Education and Social Science Research Related to Young African American Females, K-12*, attempts to look inside the published research for inclusion and treatment from an equitable standpoint. Another example would be Veronica McEachin's study, *Employee Training Programs on Ethnic/Cultural Diversity in Corporations and Service Agencies: Selected Case Studies (1991)*.

Areas of Needed Multicultural Research

While much research is underway within the framework of diversity, there are still areas in which additional research needs to be done. Following are some critically needed areas:

1. Studies on culturally-influenced learning styles are needed. The major published research consumed by educational researchers tends to exclude this dimension in their work on learning styles. The work of Barbara Shade, Janice Hale Benson, Ricardo Garcia, and Jon Reyner made some attempts to address it. Much more needs to be done.
2. Studies on academic racism and institutional racism are critically needed. While these areas are not a high priority for some, the research community must be willing to address them. Academic racism exists when the practices associated with teaching and learning assume that the traditional intellectual inferiority or superiority of a student, faculty member, or staff member is based primarily on one's race or ethnic identity. It reflects an imbalance based on instructional preference which results in extremely limited learnings about racially and ethnically different persons, ideas, heritages, or events. Institutional practice could stand much more research. Diversity is assessment in an aspect of this kind of research which is needed.
3. Studies on authorships of required textbooks in colleges and universities, especially those books used in preparing educational practitioners such as teachers, administrators, counselors, librarians, and research specialists. Who are the authors we've studied all of our lives? What academic and social history do they bring to their writings? What has been the instructional practical and multi-ethnic experiences of these authors? How much basic literature is there compared to authentic literature?
4. Studies on cross-racial, cross-ethnic, cross-gender relationships within the academic context. This is not limited to issues such as sexual harassment or racial harassment, but includes higher levels of ethnic literacy.
5. Studies on images presented of various profiles within the academic preparation of specialists. How limited is the pool of images presented? Is it deemed adequate for service to a multicultural, multi-ethnic population of clients?
6. Studies on specific disciplines in the elementary and secondary curriculum (sciences, art, history, literature, mathematics, music, drama, English) for their inclusion of multiethnic, non-sexist entities. For example, if an anthology is used for required literature, how many of the selections represent authorships and content about the culturally different? And how many are female vs. male?
7. Historical studies designed to upgrade the monocultural, historical dimension of the education of teachers and human service professionals.

Summary

Much of academic research activity, particularly in education and the social sciences, has assumed a monocultural audience and a monolingual readership. Such a monocultural, Western, English-speaking, middle class, Eurocentric perspective is no longer adequate for our comprehensive definition of a multicultural population. Educational research in American higher education must transform itself for the twenty-first century. However one defines diversity, the bottom line is *inclusiveness*. One way to accomplish this is to raise the hard questions of how we do things in education research—and why we have always done them this way.

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Presidential Address

Learning About Sex: The Missing Paradigms and Challenges to Educational Researchers

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In making this Presidential address, I will depart from some of my predecessors. I am presenting you a brief summary of some of my work in progress, and sharing my thoughts on some concepts that most educational researchers seem to be ignoring. In doing so, I hope that you will be open to the challenges that I am presenting, and start your own reflecting on how best all of us can work together to help impact this field.

When I was doing volunteer work in high school, it came to my attention that there were inadequate sex education materials for the mentally challenged adults that I was working with. They often lacked basic information essential for sexual healthy relationships. It soon became apparent to me that one of the reasons they lacked the information was because they were typically denied their sexual feelings, and weren't allowed to engage in sexual behaviors. Of course, that didn't stop them, it only changed the outlets they choose for expressing their sexuality. Over the years, it became clear to me that this problem was not isolated to this group. Most of my peer group also lacked good sexual information, and choose to engage in sexually risky, unhealthy behaviors.

In the twenty-five years since I was in high school not much has changed. Educators still focus on the major disciplines and relegate sexuality education to physical and health education segments provided to gender-divided groups of students. Educational researchers continue to focus on the major disciplines, and, for the most part ignore how we learn about sexuality, and what techniques and methods are most effective for sexuality education. Regardless of the small fluctuations in various statistics, United States teenagers have high rates of pregnancy, sexually-transmitted disease infestation, and engaging in health-risky sexual behaviors.

I feel a need to take a moment here and tell you that I am not trying to engage you in a "culture specific" or "value-laden" discussion here. Let's keep to what seem to be some important facts. Medical science tells us that teenage females usually do not have fully developed uteruses. Given their own nutritional needs, and body maturation, most female teens cannot provide the compliment of nutrients and oxygen that is recommended for optimum fetal growth. When we add to this the cross-cultural concerns for supporting a child, being prepared to parent, and being able to access jobs that provide for professional growth, we find most teenage parents severely disadvantaged in our society.

Sexual science researchers tell us that developmentally appropriate sexual education which is presented on an ongoing basis to our children tends to postpone the age of first engaging in sexual activities. Yet, few educators have access to these materials so they can provide them to the children. In fact, in many school districts and states, educators have to be specially certified to provide sexuality education, or to address questions which the children ask that are related to sexuality. In all other areas we tell educators to encourage student questioning and to help provide resources and answers for students. Yet, when students ask questions related to sexuality, most educators aren't trained to provide the answers, and don't know where to go to get the answers and resources that they need.

Do you remember the "just say no" type of campaigns of the 1960's? They focused first on cigarettes, and then on drugs. They keep recycling. Researchers have generally found such campaigns are ineffective, yet, they are now being used when it comes to sexuality. "Say no to sex" is often pushed at our kids. As an educator, I can't help but wonder at the contradictions we give our children, and be amazed if they get the point at all. There seems to be a lot of agreement that learners should feel good about themselves to optimize their learning. Yet, when we deny that our learners are sexual beings and deny that should feel good about their sexuality, we deny part of their self-esteem. We also deny the nature of learners. We tell our educators to build on curiosity, to encourage it. Yet, when learners are curious about sex they are told to "say no." To make matters worse, we are telling our teens to "say no" at a time when "no" means "yes." What we forbid becomes even more a curiosity, more a desire, and more a challenge to master.

Over the past several years I have been engaging in various lines of research with the goals of understanding how people typically learn about sex, if current models of learning apply to learning about sex, and what methods work best with various aspects of sexual education. My research has lead to my developing a sense of some of what is needed in the field. I will share with you some of the findings from the field, and the model for sexuality education that I am working on.

First, I have collected responses of over 10,000 students on my campus. These students are typically non-traditional in that they represent over 100 different language backgrounds, over 30 different religions, and are typically over 25 years old. They reflect, to a large extent, the multicultural population which lives in Chicago. They have shared their knowledge, attitudes, behaviors, and ways of learning. They have taught me that the lack of sexual knowledge is not a singularity to standard ethnocentric middle class America. Additionally, despite the focus on HIV/AIDS education, most people are still engaging in health-risky sexual behaviors. My research shows that this is

1218

due to the lack of knowledge across various aspects of sexuality, and the lack of meaningful, contextual information. It appears that cultural, and motivational factors, in addition to learning styles and opportunities for exposure to information are important predictors for explaining learning and sexual behaviors. In particular, the cultural factors of age, gender, social class, ethnicity, language, social status, and religion need to be considered. The health status of the learner also seems to be important. Those learners who reported that they had some health problems seem to have learned more about sex than those learners who did not report such problems.

Second, I have been collecting survey and interview data from adolescents. Some of the data has been collected in middle and high schools. Some of it in health and social service programs for inner city teens. This data includes self-concept, risk-taking, sexual knowledge, and self-reports of their lives. Various path and regression analyses have been used to understand what factors may contribute to effective learning and engaging in sexually healthy behaviors. These analyses have supported that in addition to the factors presented above, it is important to understand people's risk-taking propensities, and the perceptions of risk that are associated with various sexual behaviors. For instance, males and females have different perceptions of the risks associated with engaging in sexual relationships. Males report that short-term mating relationships pose few emotional or physical risks, but are somewhat emotionally risky. In contrast, one-night relationships are both emotionally and physically risky. Females typically report just the opposite. One-night relationships pose some social risks, while short-term mating relationships are seen as emotionally and physically risky.

Also important to understanding our challenges is to recognize that different learners engage in different sexual behaviors. Those who engage in behaviors that are considered health-risky tend to have different perceptions of the risk factors associated with these behaviors. They tend to be risk takers, and to differ in their motives for engaging in sex (fun, challenges, etc.). They report different ways they learn about sex, and have different conceptualizations about how they learn about sex. They tend to be more impulsive, and yet believe themselves to be more reflective.

Third, my various undergraduate and graduate students have been followed through three or more years of post-secondary education. They have provided information on the stability of their learning styles and ways of thinking, and on their conceptual development processes. They lead me to understand that among adults, there is some stability in the learning styles of reflectivity/impulsivity, concrete/abstract, and hands-on/reflective. It also is important to distinguish between visual and auditory when it comes to the type of materials. However, the visual/auditory styles seem to interact with other styles, and are dependent upon the types of learning that are presented. It also seems that with sexual education materials conceptual change and learning styles function independently.

Fourth, I have conducted various analyses of sexual education materials used by the schools. The analysis which I am going to focus on here includes the learning styles and methods used within the texts, and the appeal of the texts to the students. Repeatedly, when sexual education materials are available (in many schools they are not), they rely on strictly print/visual materials that limit the interactiveness of the reader, and present material in an isolated, abstract manner. Typically, the only information presented in concrete forms is basic biology, and statistical information concerning rates of infection, etc. The things that we know about incorporating learning strategies and organizing text in ways that provide scaffolds and allow learners to use situational contexts are typically not incorporated into texts.

It should be noted that the teens I have interviewed generally did not report learning anything that was meaningful or important to them through the use of sex ed texts. When it comes to learning about sex, both males and females report that friends, other peers, and sexual experimentation with others are primary ways of learning about sex. Males also report that they learned about sex through discussion with older siblings and peers, through listening, and through challenges. Many times they engaged in hands-on, active learning with selves or others because of dares and challenges from others. On the other hand, females reported learning through reading popular magazines and romance novels, through religious affiliations, through relationships (an emotionally-tied partner taught them), and through their own fantasies. Few teens report that their parents are good sources of information, or that teachers at school responded to their questions about sex.

Fifth, my work with teachers has lead to my hosting focus groups, professional discussions at conferences, and other discussion groups among teachers. Teachers report that they have problems of students acting out sexual abuse, asking about sex, and engaging in sexual behaviors in the schools. Reports show that sexual harassment among our students is high, and teachers often report that they see others victimized, and may feel victimized themselves. They don't know what to do, or how to respond.

In short, our "methods" related to sexuality education don't match what we know about learners and learning processes. To make matters worse, there are no Midwestern states that require that sexuality education is part of teacher education. Ask around colleges of education, and most don't have a sexuality education specialist on faculty, and most don't offer a course for pre-service teachers, much less mandate such a course. Most human development texts provide a cursory overview of the field, usually focusing on biological aspects, and rarely providing information that helps educators deal with critical issues they face in their classrooms. In addition, most of my colleagues who teach human development are quick to admit that they ignore this aspect of the course, or zoom through it, rarely discussing any of the problems or issues that educators face in the classroom. This is confirmed by the teachers who report that they have never received any training on sexual education.

Now, look among our colleagues, our membership. How many educational researchers readily admit to studying and researching aspects of sexuality? How many belong to groups like the Society for the Scientific Study of Sexuality, the American Association of Sex Educators, Counselors and Therapists,

or the Sexuality Education Information Council of the United States? How many times have you even heard of sex ed reported at MWERA meetings? In general, it is pretty difficult to find a Division that those of us who do research can use as a home within MWERA. Worse yet, we don't often feel at home in other organizations, and thus, we don't share a common vocabulary among sex educators and educational researchers. We don't talk to each other. Thus, sex educators don't usually know or use aspects of educational psychology and human developmental learning that may be helpful for the learners. They don't know how to do applied action research in their classrooms, and they don't have contacts to have others help them engage in meaningful evaluation of materials.

In short, I do not believe that the current methods of sexual education are working effectively. I question if the models, paradigms, and methods we use to teach cognitive skills, enhance cognitive learning, impact affective learning, or otherwise lead to new behaviors are effective for learning about sex. I think that we need a new model that incorporates the various aspects I have talked about, always remembering that each individual is a unique learner. When we consider the age, gender, social status, economic status, religion, language, ethnicity and health of the individual into the model, and then consider the risk-taking propensities, perceptions of risk, learning styles and motives of the individual, we should come closer to understanding the factors that need to be incorporated into building sexual education materials and processes. When we engage the sex educators in open discussion about how learning works in other disciplines, and then study how it works in sex ed, we might find that we not only have to expand our current learning paradigms, but also make changes in many of them.

Here are some of our challenges:

1. If we are truly a profession, a discipline, a specialty in our own right, we must recognize all of education, and be prepared to research all areas, including sex ed. We cannot continue to ignore one of our most pervasive societal issues and pretend that because it is often not a major discipline it does not deserve major attention. If we had a quarter of the studies on sex ed and sex learning that we have on self esteem, we would know a lot more, and be more effective in the ways our schools provide sex ed.
2. If we are going to be serious in our efforts to know about sex ed, we have to look at the crisis our vocabulary causes in sex ed. We can't talk about "sex ed" as just cognitive or just affective, or just psychomotor learning. Sex ed crosses all domains. Maybe someday I'll have converts to my belief that sex ed requires its own domain, as well as its own learning style vocabulary.
3. Yes, current vocabulary among educational researchers can't be used by sex educators in real ways. Sex educators can't talk, and be taken seriously, about developing hands-on materials, take home activities, group projects, experiential or experimental or cooperative learning activities. They are even hesitant to talk about situated learning, and building on curiosity. After all, we are dealing with educators who have to be aware that the vocabulary and methods they use is always scrutinized by others. It wasn't until a few years ago that educators were even allowed to use the term "menstruation" when they taught sex ed. Today, most still can't use the other "M" word, masturbation. Also, depending upon the state they teach in, they may not even be able to use words like "condom" in the classroom. Many times, you can find whole curriculum that don't include these words.
4. We have to go to the source, not expect the source to come to us. Until we are all reading the sex ed and sex research journals, we are not going to be able to know the problems already faced in the field. So far, we have not been open to sex educators. We haven't invited them to join us, and haven't provided a means for their voices to be heard among us. We need to go to them. I can count on one hand the number of educational researchers who routinely are involved in the sex education field and attend those professional meetings. If we don't make an effort, we can't expect one back.
5. We have to look at our own institutions, whatever the level of learner. Do we have sexual educators on staff? Is there any focus on teaching sex ed, or teaching people to teach people to be sex educators? Do we have courses, inservices, professional development opportunities for our sex educators and teachers who need information and resources? Do we have the theory to build upon the education?

I have to caution you that if you take my challenges seriously, you are in for not only a lot of hard work, but potentially a lot of challenges to your own career. I don't recommend those new to educational research embark too deeply unless they have the blessings of those that have power over their careers. I was blessed in my pre-professional, my graduate work, and my professional work with having mentors and colleagues who felt that this was an important issue, and who "humored" my studies in this area. However, I was always careful to remember that I had to do other kinds of research when it came time to publish or perish. I learned that I had to be careful in my work in this area, and very serious, so that my work might be taken seriously. Unfortunately, the stigmas that sex has in our society often are carried over to our professional lives, and blushing colleagues. This work is typically not the thing that gets shared in hallways the ways other share what they have learned.

However, there are many among us who are far enough in our careers that we can afford new challenges, and can stretch in new directions. We can not only expand our own thinking into these areas, but also bring along colleagues. There are many challenges, many ventures, many avenues awaiting us if we choose to learn more about learning about sex. I hope that you will seriously consider my challenge and join me in this task.

Division A Invited Address

The Role of Communication in Providing Leadership for School Restructuring

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Abstract

Educational reform now focuses largely on school restructuring. In this context, both transformational leadership and cultural change paradigms have become critical issues for school administrators. The argument is made that both concepts are inextricably linked to communication. Consequently, leadership for change requires both an adequate knowledge base pertaining to leadership and organizational theory and knowledge and skill in the area of communication theory. A research agenda for studying communication in schools and the inclusion of communication theory in the preparation of school administrators are recommended.

During the early 1980s, school reform was characterized by a seemingly endless list of intensification mandates, such as longer school years, longer school days, and increased graduation requirements. These initiatives, advanced by elected officials and powerful business executives, were predicated on the notion that higher levels of productivity could be achieved by doing more of the same within the existing structure of schooling. This strategy allowed local boards and administrators to "coast on tradition" (Danzberger, Kirst, & Usdan, 1992, p. ix). In essence, these local officials merely had to implement and regulate ideas developed elsewhere. But the accession of school restructuring changed this condition. In the context of decentralization, principals and superintendents are being asked to both lead and manage school and district improvement (Murphy & Hallinger, 1987). As a result, their role expectations are becoming more developmental than reactive, a condition that accentuates the symbolic and political frames of their behavior (Bolman & Deal, 1994).

The purpose of this article is to present the argument that the fundamental means for providing leadership for school restructuring, transformational leadership and cultural change, are attenuated when administrators neither understand nor appreciate communication as a core element in their practice. Further, the contention is made that this deficiency exists for most administrators because communication theory has received insufficient attention in both professional preparation and school-based research.

Critical Elements of School Restructuring

If meaningful school restructuring is to occur, the task must be addressed at two levels: a realignment of the school; the need to reshape traditional power relationships between public education and its clientele (Elmore, 1990; Conley, 1993). Both assignments require transformational behaviors and cultural change paradigms. *Transformational* leadership seeks to influence behavior by appealing to "higher ideals and moral values such as liberty, justice, equality, peace, and humanitarianism" (Yukl, 1989, p. 210). Components include a common goal commitment (both the leader and followers desire the same goal), the pursuit of higher levels of morality (emphasis on moral values to govern behavior), and a reliance on higher-order needs (the leader focuses on more advanced human needs when considering motivations) (Burns, 1978). In essence, transformational leaders seek to empower teachers and other employees so that collectively members of the organization can eradicate existing unjust, inequitable, or ineffective conditions in their cultures (Kowalski & Reitzug, 1993). This conceptualization of leadership, however, has not been dominant in either business (Bennis & Nanus, 1985) or education (Yukl, 1989).

Cultural change paradigms are predicated on the assumption that organizational modifications are resisted either because an institution's culture is negatively disposed toward change or because a specific initiative is incongruous with the dominant values and beliefs held by those who operate the school. This approach to school reform can be defined as a revision of common understandings, occurring first at the deepest level of basic assumptions and ultimately at the level of overt behaviors. It is a process that relies on transformational leadership styles to reshape the form and content of an institution's symbolic field (Mohan, 1993). In schools, administrators are expected to initiate the process by reading the existing culture to determine how fundamental beliefs result in positive or negative practices (Deal & Peterson, 1990). Following this diagnostic stage, the leader promotes open and democratic discussions allowing members of the culture to determine the extent to which modifications are necessary. These discussions become a forum for allowing members of the school family to find common ground for a vision and a plan of action (Prestine & Bowen, 1993).

Since the early 1980s, the targets of educational reformers have shifted from students to educators to schools. This is evidenced by the fact that iterations of restructuring, such as site-based management, now enjoy center stage. *Structure* refers to the formal ordering of roles in terms of authority, job descriptions, and work assignments; also included are the ar-

rangements of networks that affect formal and informal interactions (Toth & Trujillo, 1987). Restructuring thus implies the reshaping of these elements. In the case of public schools, advocacy for the process emanates from the conclusion that centralization has encouraged "lock-step" programs that are insensitive and unresponsive to a changing world. As a result, reform policy is now heavily influenced by decentralization theory (the closer the process of governance is to those affected, the more responsive it is to real needs and wants). The intent of decentralization is to make schools less dependent on a hierarchy of authority and more inclined toward collegiality and shared authority.

Because schools are complex social systems in which behavior is influenced by a network of interactions among individuals, among formal and informal groups, and between an organization and its external environment (Kowalski, 1995b), effective decisions about education are usually not made unilaterally. Rather they evolve from political actions, typically ending in compromise. Accordingly, those who have studied organizational change (e.g., Bracey, 1994; Murphy, 1991; Schein, 1996) often conclude that restructuring requires change agents who view schools from a social systems perspective, i.e., leaders who see schools and districts as complex systems composed of interrelated parts that interact to varying degrees. With this perspective, one is less prone to suggest a single cause for the imperfections of public education and less inclined to believe that meaningful improvement can be produced by simply tinkering with select institutional elements. Philip Schlechty (1997) wrote, "Systemic thinking requires us to accept that the way social systems are put together has independent effects on the way people behave, what they learn, and how they learn what they learn" (p. 134). As social systems, public schools are shaped by both formal structure and culture, by both internal (within the school) and external (community) political transactions. Therefore, structural change not supported by cultural change eventually gets overwhelmed by the existing culture (Schlechty, 1997).

Among those pointing out the importance of culture to systemic change is the noted psychologist, Seymour Sarason (1996). After studying failed reform efforts over the past four or five decades, he determined that the "system" of public education was allergic to change; any effort to alter one part of a school was quickly obstructed by system wide barriers. He concluded that the source of this intractability was a pervasive culture erected on a set of assumptions shared by virtually all educators. He went on to note that this culture evolved over time through a series of political compromises between schools and society. According to Sarason, it is this macropolitical relationship that makes it impossible for us to understand what goes on in schools "only by riveting on what goes on in schools" (p. 2).

Also studying the effects of local political pressures on school district design, Jane Hannaway (1993) found that even in districts with similar institutional environments and technologies, differences could be observed in organizational design and procedures for decision making. In summarizing her research, she concluded, "The results suggest that the assumption implicitly made by many educational reformers that schools are free to choose their organizational structure is, at least to some significant degree, overdrawn. External political pressure at the local level appears to constrain managerial arrangements" (p. 160). In essence, she discovered that educational philosophy and organizational design are endogenous to local districts (Hannaway, 1992). Such findings suggest that neither structure nor culture are manufactured entirely by school boards, administrators, and teachers. Rather they are produced by innumerable internal and external interactions. By focusing on the school as a social system, we begin to comprehend the essential nature of communication in both transformational leadership and cultural change models. Language and its use provide the keys to understanding why things are the way they are, within the school and between the school and its external communities. In this respect, reshaping formal structure and institutional culture necessitates an appreciation of how schools are affected by their communities and in turn affect them (Sarason, 1996).

Unfortunately, little research has been done on the specific characteristics of culture that hinder or enhance change (Burgess, 1996). Most researchers have been preoccupied with finding relationships among phenomena, and their inquiries have relied largely on positivist approaches. Such efforts have not provided a sufficient picture of reality. In order to study behavior in a social systems context, for example determining the ways in which micro and macropolitical interest groups influence ideology and policy, researchers need to use holistic paradigms (Bacharach & Mundell, 1993). This alternative requires an understanding of mixed methodologies and a comprehension of the relationship between culture and communication.

The Relationship Between Culture and Communication

The relationship between culture and communication may be more expediently studied when both variables are explained. Edgar Schein (1992) identified culture as a multilevel construct consisting of *basic assumptions*, *espoused values*, and *artifacts*. The basic assumptions make up the deepest and most mental layer; here we find the tacit beliefs educators hold about themselves, their relationships with other people in the school, and the purposes of the school. Espoused values are distinguished by strategies, goals, and standards representing preferred behaviors for coping with daily job requirements. Artifacts are symbolic manifestations of the basic assumptions; examples include language, myths, rituals, and ceremonies. Artifacts and espoused values exist on or near the surface, and thus, constitute the more visible and identifiable dimensions of culture (Short & Greer, 1997). By comparison, basic assumptions are highly subjective and pose the greatest challenge to change agents,

because identification typically requires extensive observations and analysis (Rousseau, 1990).

School cultures are often described quantitatively on the basis of strength, i.e., along a continuum ranging from *weak* to *strong*. Weak cultures are fragmented and difficult to discern because few teachers and administrators accept common assumptions about professional responsibility, student discipline, and the like. Strong cultures are characterized by a high percentage of employees holding the same assumptions. In most organizations, including schools, "there are often different and competing value systems that create a mosaic of organizational realities rather than a uniform corporate culture" (Morgan, 1986, p. 127). This is one reason why an accurate description of a school's culture is difficult to capture. While the term *strong cultures* has been linked to effective schools (e.g., Levine & Lezotte, 1995), strength does not indicate the quality of shared values and beliefs. This attribute is more commonly described along a continuum from *positive* to *negative*, reflecting the degree to which dominant assumptions are congruous with the professional knowledge base, encourage adaptations, and contribute to positive outcomes. Some writers (e.g., Mohan, 1993) refer to cultures as being *stable* and *unstable*. The former are characterized by clarity of purpose and vision, tendencies to view tradition with moderation, and leaders who accentuate the positive and encourage collective action; the latter are characterized by disagreement in core values and purposes, high uncertainty among subcultures, the protection of tradition to avoid change, and low morale. In organizational research, the ability to be innovative is considered a positive attribute (Burgess, 1996).

Communication commonly has been described as a loop involving a source, a receiver, and a channel. This limited perspective stems from the classical theory of communication that was articulated by Harold Lasswell (1948): "A convenient way to describe an act of communication is to answer the following questions: Who..Says What..In Which Channel..To Whom..With What Effects?" (p. 37). This theory divides the communication process into a series of discrete parts that include a source, a message, a channel, a receiver, and feedback (Pepper, 1994). This elementary view was widely accepted because it was easily understood and readily assimilated in bureaucratic-like organizations, i.e., the functions of transmitting information and issuing commands were congruous with accepted managerial responsibilities in hierarchies (Taylor, 1993). One of the limitations of the classical theory of communication relates to the conveyance and maintenance of organizational culture. When communication is treated merely as interaction, words are judged to be containers of thought and feelings. In truth, meaning is not embedded in the content of words but rather the product of a "complex communicative process that includes words, intentions, contexts, histories, and attitudes" (Pepper, 1994, p. 9).

Discussions of communication appearing in management literature have been influenced substantially by classical theories of communication and organizations; that is to say, they usually focused on the study of undesirable by-

Table 1
Common Communication Problems Associated with Organizational Structure and Individuals

Factor	Perceived Effect
	Organizational-Based Problems
Size of organization	The larger the organization, the more difficult it is to maintain effective communication.
Reliance on a formal channel	Attempts are made to restrict communication to a formal channel known as the "chain of command."
Hierarchy of authority	Because most power and authority is vested in a small number of people, these individuals experience information overload (a condition that reduces their effectiveness).
Information Filtering	Because information passes through a prescribed channel, it gets filtered at each stage of transmission.
Closed climate	The school or school district discourages interactions with the community because such exchanges are seen as conflict-producing.
	Personal Problems
Poor listening skills	Administrators are unable or unwilling to receive information.
Poor encoding/decoding skills	Inability to structure messages appropriately; inability to comprehend verbal and nonverbal messages.
Lack of credibility or trust	Messages are not accepted as being accurate; motives of administrators are questioned.
Elitism	Administrators isolate themselves, electing to communicate with a select number of powerful individuals.

1223

products of bureaucratic structure in the context of discrete steps in information exchanges. For example, excessive levels of hierarchy were often deemed to produce undesirable communication outcomes, such as illegitimate bypassing and reliance on informal channels (e.g., Culbert & McDonough, 1985). Table 1 provides other examples of organizational and personal communicative problems of this type. While these problems are neither invalid nor unimportant, they constitute a restricted and insufficient perspective of organizational communication. As such, they diminish the importance of communication, reinforce erroneous conclusions about the connections between communication and culture, and encourage modernistic approaches to studying communicative behaviors. Many researchers, for example, have categorized organizational climate and culture as causal variables while classifying communicative behavior as an intervening variable. A proclivity to treat the relationship between culture and communication in this manner has been verified by a macroanalysis of communication research conducted across all types of organizations; this review found that modernistic approaches have been far more prevalent than either naturalistic or critical modes of inquiry (Wert-Gray, Center, Brashers, & Meyers, 1991). As John Dewey (1938) long ago observed,

> *The way in which the problem is conceived decides what specific suggestions are entertained and which are dismissed; what data are selected and which are rejected; it is the criterion for relevance and irrelevancy of hypotheses and conceptual structures. (p. 138)*

In this vein, a presumed cause-and-effect relationship between culture and communication has limited our understanding of how cultures are formed and how they can be transformed.

More recently, enlightened communication scholars have provided a broader perspective of organizational behavior, one that views the relationship between culture and communication as reciprocal. Charles Conrad (1994), for example, wrote, "Cultures are communicative creations. They emerge and are sustained by the communicative acts of all employees, not just the conscious persuasive strategies of upper management. Cultures do not exist separately from people communicating with one another" (p. 27). Stephen Axley (1996) described the bond between culture and communication this way: "Communication gives rise to organizational culture, which gives rise to communication, which perpetuates culture" (p. 153). This association implies that communication cannot be understood sufficiently by reducing it to a loop of linear steps or by focusing research exclusively on the transmissions between senders and receivers (Katz & Kahn, 1978). Instead, investigators should treat communication as a process through which organizational members express their collective inclination to coordinate beliefs, behaviors, and attitudes. Put more simply, it is course of action that people in a school or district use to give meaning to their organizational lives by sharing perceptions of reality. A negotiated order evolves from both internal and external interactions among individuals and groups, and this interplay occurs in the informal as well as formal organization. When viewed from this social system standpoint, communication is a process that shapes, transmits, and reinforces a socially-constructed culture (i.e., a set of shared dimensions that form the assumptions, values, and artifacts of a particular organization) (Mohan, 1993).

Within the framework of a cultural change model, problem solving requires administrators to identify how individuals perceive reality so this information can be used to erect mutual understandings about a school's purposes and practices. This objective is unlikely, however, in situations where administrators employ communication practices, either consciously or unconsciously, that restrict the debate of values, discourage conflict, and limit access to information (Deetz, 1992). Regrettably, managers in many organizations continue to treat information as power, and they restrict access to it as a means of protecting personal power (Burgess, 1996). Superintendents and principals who fall into this category are incapable of actualizing the primary function of transformational leadership—shaping and developing new norms in the school (Carlson, 1996).

The reciprocal relationship between culture and communication is especially noteworthy with respect to the symbolic frame of administration. When an administrator appropriately recognizes that organization does not precede communication and becomes subsequently supported by it, he or she is more inclined to view organization as an effect of communication (Taylor, 1993). This changes our thinking about critical leadership attributes. For example, credibility and trust (essential characteristics of leaders who assume the role of change agent) are not produced by structure or programs; instead, they spring from human interactions. Unless leaders accurately evaluate the effects of communication on underlying assumptions, and unless they properly dissect the language of a school, they probably cannot determine the extent to which culture facilitates or obstructs change. Language within an organization is the primary vehicle through which audiences develop a sense of order; the study of language focuses on how an institution and its various publics collectively define and participate in organizational reality (Toth & Trujillo, 1987).

A Call for Action

To provide capable leadership for school restructuring, administrators must accurately assess the existing culture and gain an understanding of how and why it was established and sustained (Deal & Peterson, 1990). The nexus between culture and language suggest that these tasks are not achievable for administrators who lack an understanding of communication theory. Therefore, two specific actions are recommended. First, research on culture and communication in school settings should become a high priority among scholars in educational administration. Tradi-

tional approaches that examine only select aspects of the communication process, aspects such as direction (e.g., top-down) and channels (formal and informal), fail to show how value orientations cut across organizational contexts and shape the organization's culture (Mohan, 1993). Second, communication theory should be an integral part of professional preparation in school administration. This argument was valid long before school restructuring became a popular issue, because administrative work has always centered around interpersonal relationships. The pursuit of culture change has simply made the need to study communication theory more obvious.

As already suggested, dominant perspectives of communication in schools have been influenced by classical theory which portrays the ideal school as tightly coupled, rational, well-defined, orderly, and logical (Owens, 1995). In this utopian organization, communication is transparent. That is, it is assumed that the "intentions of the message sender can be directly coded into explicit message language or manifest content" (Taylor, 1993, p. 251). This presupposes the existence of a coding-decoding procedure allowing the sender and receiver to exchange the accurate and complete meaning of a message through words. Based on this supposition, a failure to communicate can be blamed on one of the following problems: (a) the coding procedure was not properly used; (b) the sender did not properly construct the message; (c) the receiver was inattentive; (d) there was interference in transmission (e.g., the memorandum got lost). Both the supposition and simplistic framework it engenders disregard the significance of context in information exchanges (Taylor, 1993).

Over time, we have discovered that our schools are not the ideal organizations proposed by classical theory. Rather, they are loosely-coupled and composed of multiple subcultures in which ambiguity and behavioral inconsistencies are pervasive. Behavior in them is frequently unpredictable and bewildering. As Robert Owens noted, "there is often an obvious disjunction between publicly espoused values and what we do in schools" (p. 10). When we merely classify artifacts or identify espoused values, we usually capture a limited, and frequently inaccurate picture of culture. Worse yet, some administrators are inclined to ignore the perceptions, feelings, and emotions of other members of the school family in assessing culture. Instead they approach change as if their own eyes and ears were sufficient to determine need and direction (Sharpe, 1996).

To reach the deepest levels of culture, and thus to determine how communication influences behavior in schools, we must rely on multidimensional, multilevel analyses (Mohan, 1993). Such investigations should explore value orientations and contextual variables, especially with respect to explaining how these variables contribute to differences in school cultures (i.e., differences between strong and weak, positive and negative, and stable and unstable cultures). This form of research requires interpretive paradigms permitting us to observe, measure, and classify organizations from a communication perspective (Taylor, 1993). Interpretivists view reality as a subjective process; their goal is not to determine the status of the organization, rather they seek to understand and explain why a school is the way it is. The approach focuses on the study of meaning, or put another way, how people make sense of their world through communication (Wert-Gray et al., 1991). Schein (1992), for instance, advocates studying culture through the eyes of its participants by engaging them in discussion centering around five primary themes:

- *Relationship with the environment* (What is the primary mission of the school? Whom do we serve? What is our relationship with the community?)
- *Reality, truth, and the basis for decisions* (How do members of the organization determine if something is true or valid? What basic assumptions define reality?)
- *Nature of human nature* (Are students inclined to do good things? Are some students predestined to fail? Are most parents cooperative?)
- *Nature of human activity* (What assumptions are implicit in the problem-solving techniques used in the school? Should teachers make decisions alone or collectively? Should teachers participate in administrative decisions?)
- *Nature of human relationships* (What are the assumptions about power and authority? What social relationships are acceptable?)

Accurate descriptions of behavior in each of these categories are more probable when the researcher has the ability to interpret verbal and nonverbal messages accurately.

The study of communication and culture also can occur in other ways. For example, the researcher may concentrate on the effects of modern technologies. The infusion of new electronic devices, such as FAX machines, e-mail, computers, the Internet, and distance learning has created potentialities that are both positive (e.g., increased communication) and negative (e.g., dehumanized communication). Their acceptance and use in schools also is influenced by culture. For example, teachers often exhibit an unwillingness to change instructional methods even when new technologies permit them to do so. In another vein, communication-centered research can be used to explore moral and ethical issues. For instance, restructuring prompts leaders to induce a reconsideration of long-standing assumptions and values or to consider redistributions of power and authority. A range of possible research topics is shown in the typology contained in Table 2.

A dearth of research on communication in schools may partially explain why this topic has received relatively little attention in administrator preparation programs. But neglect also appears to be the product of indifference. Thirty years ago at a national conference sponsored by Project Public Information and Stanford University, a group of scholars in school administration and communication theory

Table 2
A Typology for Communication Research in Schools

Focus	*Potential Areas of Inquiry*
Institutional Culture	• Effects of communication on shaping culture • Relationship between communication and culture (strength, quality) • Communication among subcultures in schools • Use of communication in socialization, enculturation • Development of language within a school culture
Ethical/Moral Concerns	• Leader influence on vision, goals, or ideas • Inducing cognitive redefinitions, value orientations • Leader communicative behaviors and gender issues • Leader communicative behaviors and the expression/use of power • Communication in multicultural contexts
Organizational Change	• Communicating the necessity and means for change • Communication in "high support" and "high resistance" schools • Communication in periods of instability, crisis • Relationship between change strategies and communicative behavior • Case studies of successful and unsuccessful change ventures
Networks	• Formal and informal networks • Open and closed networks • Network preferences in effective and ineffective schools
Conflict Resolution	• Communication as a source of conflict • Inter- and intragroup communication • Communicative behaviors and conflict resolution
Media of Communication	• Written versus oral communication • Electronic networks - effects on communicative behaviors - effects on accessing and using information - effects on group decision making
School Productivity	• Communication and administrator effectiveness • Communication and employee effectiveness • Communication and student effectiveness • Communication and community satisfaction
Leadership	• Communication knowledge base and skills among school leaders • Leadership styles and communicative behaviors • Language as a symbolic dimension of leadership

joined forces to discuss the study of communication. Recently, the *Journal of Educational Relations* published a monograph of that conference. A case for requiring administrators to study communication was developed and tied to perceived deficiencies in practice. One speaker offered this list of reasons why educators communicate poorly: (a) they have a false impression of their ability to communicate; (b) they are not accustomed to competing for the public's attention; (c) they operate in relative obscurity and are unprepared for the public's interest and scrutiny; (d) they minimize the value of outside opinions; (e) they have little communication experience and almost no meaningful communication training (Christian, 1997). While some of the recommendations presented at that conference have been addressed adequately by the National School Public Relations Association, one that has gone unheeded pertains to integrating communication theory into the preparation of school administrators (Holliday, 1997). A lack of action in this area is especially disconcerting in light of mounting evidence that the work of school administrators is permeated by interpersonal relationships and the use of information. Such evidence can be found in reviews of change literature (e.g., Fullan, 1991; Hord, 1992), studies of interpersonal relationships between principals and teachers (e.g., Bredeson, 1987; Reitzug, 1989; Martin & Willower, 1981; Willower & Kmetz, 1982), and studies of the work lives of superintendents (e.g., Blumberg, 1985; Kowalski, 1995a).

Table 3
Possible Themes for the Study of Communication in Administrator Preparation

Theme	Examples of Content
Communication Theory Organizational Behavior	How language and communication build and sustain culture; and how communication is used to negotiate order; the role of communication in organizational change.
Community Relations	Two-way communication channels; encouraging interaction with the community environment; public relations; building community support.
Communication and School Outcomes	Effects on employee performance; communication as a form of motivation; effects on student outcomes.
The Symbolic Frame of Leader Behavior	Communication and organizational symbolism; language as form of symbolic expression; modeling desired changes.
Modern Technologies	Potential benefits of modern technologies; potential problems related to using modern technologies for communication; effective control of modern technologies.
Moral/Ethical Dimensions	Communication as an expression of power; inducing cognitive and value changes; empowerment and shared governance.
Interpersonal Relations	Dimensions of communication; conflict resolution; open communication.

Communication is commonly addressed in courses on school-community relations and public relations; some newer textbooks on organizational behavior in schools also provide limited material on the subject (e.g., Hanson, 1966). In most instances, however, organizational communication receives only superficial treatment. Rarely is the subject examined thoroughly in relation to culture and the politics of school reform. If adequate coverage is to be provided, at least seven themes need to be addressed; they are outlined in Table 3. The scope of these themes suggests that at least one separate course on communication and interpersonal relationships should be required in professional preparation.

Concluding Comments

When the United States moved from an agrarian to a manufacturing society at the start of the twentieth century, public education was reshaped from a system of largely one-room country schoolhouses to modern organizations displaying many facets of bureaucracy and scientific management. The more recent transition to an information society, however, has not yet produced a parallel realignment despite intense criticism and sustained calls for educators to do so. Consequently, formal structures and cultures crafted nearly 100 years ago remain operative in a majority of our public schools.

On the surface, the idea of reinventing schools from the center is appealing because it is congruous with democratic governance, decentralization theory, and professionalism (Carlson, 1996). But the goal also remains highly ambiguous. Neither the means nor the ends for restructuring are certain (Leithwood, 1994). Nevertheless, three critical facts shape the reform mission: (a) the school has become the primary target for reform; (b) administrators are expected to provide the leadership necessary for institutional renewal; (c) decentralization theory has been adopted as the conceptual guide for change. As Kenneth Leithwood (1994) accurately concluded, these circumstances require commitment rather than control strategies. What educators believe and value is deeply situated in their institutional cultures, and it is when we start to think about the capacity for change within a cultural context that communication emerges as a critical variable. Discussing the process of building a capacity for change, Philip Schlechty (1997) offered a list of inhibiting factors that pertain to communication: a lack of communication within schools, between schools, and between schools and society; public misperceptions about educational purposes and practices; ignoring the opinions of teachers who seek to do things differently; minimal teacher input regarding student expectations; the lack of a centralized system for disseminating accurate information at all levels of the decision-making process; and, inadequate opportunities and procedures for teachers to share innovative ideas.

If behaviors in schools were random rather than the product of fundamental assumptions cutting across institutional experiences, cultural transformations could more easily be achieved by simply replacing personnel or juggling organizational charts (Robbins, 1996). But this clearly is not the case. Even in schools where there is a positive disposition toward change, educators are likely to be incapacitated by their lack of knowledge. Seymour Sarason (1996) pessimistically concluded that educators were incapable of renewing their own institutions because they were ignorant of organizational culture and the change process; and he chastised teachers and administrators for rarely reading professional journals and books that could enlighten them on these topics. In his book, *Leading Minds*, Howard Gardner (1995)

provides another critical element. He agrees with the contention that leaders must possess the technical knowledge associated with change, but he goes on to point out that such knowledge is of limited value if leaders do not have the communication skills necessary to build support for their ideas.

In the past an indifference toward studying communication was less debilitating because an imposed structure, supported by a culture that viewed schools as agencies of stability, resulted in role expectations that were largely managerial. Today, conditions are clearly different. Policymakers are asking educators to venture into unfamiliar and risky territory. More precisely, they are asking administrators to assume responsibilities for which, at best, they have been marginally prepared. Those of us who educate practitioners have a moral and professional responsibility to address this problem. At the very least, we should focus our research on issues of practice that relate to cultural transformations, and we should provide our students with a comprehensive understanding of communication.

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1229

Division J Invited Address

Technology and Teaching in the Communications Age

Molly Herman Baker
Western Illinois University

A couple of years ago, I was winding down a four-year appointment as an instructional designer, supporting faculty in their efforts to learn how to use technology in their teaching. In this capacity, I offered hands-on training, customized lessons, and individualized consultation on a wide range of technology-related topics. It was not uncommon for me to spend two to three weeks learning all the ins and outs of a piece of software, creating step-by-step documentation, and building a database of tips, tricks, and applications for its use in the higher education classroom. Now that I am in a tenure-track teaching position, I no longer have three weeks to learn anything (especially new software) and think up ways to use it; it's all I can do to join my colleagues in the on-going struggle to teach, do research, serve on committees, and try to keep up. I tell you this only because I want you to know that I am not just another "techie", but one who has been on both the technology support and faculty sides of the fence.

Today, I would like to dialogue with you about this reality of the college professor and technology in the '90's. What's happening with technology at your institution? Why do you think we need it? Why do you want it? What makes implementing it in your teaching so difficult? Where are you with it personally, and what tricks can we come up with to make it an integral, supportive aspect of your professional life?

First, if your institutional environment is anything like mine, administrators are lauding the potential of technology and seeking funds to expand technology resources for teaching. In fact, much of the new money being spent in higher education today is for technology. Few administrators have given much thought to supporting faculty in finding ways to integrate the technology effectively into teaching, however. It's just expected! Those with more insight are hiring support staff who often reach a small minority of the faculty masses.

Meanwhile, there is a lot of pressure on faculty to make the technology "work," that is improve teaching, increase enrollments or retention, expand ways to "instruct" non-traditional students, etc. A few faculty are excited about the winds of change and have been first in line to seek out the college's resources to break new ground, in spite of all the growing pains associated with being on the "(b)leading edge."

The rest of us range from "show me how, and I'll try" to "who has time? ask me next year" to "let Mikey do it and than I'll see" to "make me!" Some of us are concerned about the apparent emphasis on technology for its own sake, rather than seeing it as one, potentially useful tool. Others feel the "tool" analogy supports the adage that "When all you have is a hammer, everything looks like a nail." A few bemoan the difficulty technology creates in keeping a moral purpose to what we do in the forefront; how are we going to find happiness in all of this? Added to the pot are our students who are coming out of high school (or increasingly out of work environments) with more technology skills than ever. They expect faculty in the '90's to use technology if they are up-to-date in their fields. Hmmm...maybe Borg (Star Trek) is right: "Resistance is futile. You will be assimilated."

So, where are we with all of this? IS resistance futile? In my opinion, technology is not a passing fad; we CAN find ways for it to make a positive difference in our professional lives and that of our students; we must find effective ways to use it in higher education for a large number of legitimate reasons. However, I don't think technology is an educational panacea. I DO know that it is not easy for faculty:

- to carve out time for exploring the multitude of available options in order to choose a match with your level of technology experience and particular teaching style.
- to identify cheap, effortless, or feasible options to do this year, especially when our retention or tenure criteria do not reward technology-related effort.
- to find a meaningful place for technology within our own academic or teaching passions.
- to develop confidence when the "big guns" are into huge projects, lucrative grants, or high-end applications of technology.
- to overcome the frustrations that are inevitable as we try to learn the technology skills necessary to implement our ideas and deal with information overload.
- to work with support staff who sometimes speak in "techno-babble" or try to take over (or simply cannot respond to our needs immediately).
- to implement our ideas when the technology is not readily accessible in the classroom or not reliable when it is there.

Now, we can continue to dwell on the "poor us" scenario, or we can accept the downside of it all and rise above it to focus instead on the opportunities technology is affording us, especially some practical ideas on how we can make it work FOR us, at least in the short-run.

Now that most of us have a computer on our desk and e-mail access, what are some reasons that we might WANT technology to be a part of our professional lives? Would you agree that we want:

- to be in touch with colleagues we can be energized by or share information with?
- to access information that we need faster and easier?
- to be up-to-date and effective in our respective disciplines?
- to be in touch with our students who are enrolled at a distance so that we can easily exchange information and get acquainted?
- to relate to our tech-savvy students?
- to be able to reach students with new instructional strategies made possible, easier or more interesting with technology? perhaps, even breathe new life into courses taught many times in the past?
- to receive technology or other types of perks that administrators dole out periodically?
- to have a diversity of ways to express our ideas?

- to have grant-writing and research-in-teaching opportunities?
- to receive local recognition and state/regional/national opportunities to share our technology experiences?
- to avoid looking stupid?
- to increase the opportunity to talk with upbeat people and learn from colleagues with more experience?

You can probably think of dozens of other reasons we might want technology to be present in our professional environments. The important thing is to find a personalized combination of technology-related activities that will help you learn about technology in education while serving your personal and professional needs.

Personalized combo, you say? The trick is to take a quick look at some of the tips and ideas below that I have practiced myself or observed others do during recent years. Choose the ones that fit your time, interests, and readiness as far as technology is concerned. The main objective here is to have a plan that begins where you are and helps you move toward finding a technology niche that you can be energized by and rewarded by. A niche, you say? Yes. Give up on the idea, for now, that you are going to change the world and do a project that will rival the "big guns." For most of us, successful integration of technology into our professional lives, especially teaching, begins with a plan that has a step-wise "feel" to it. Beginning with the development of a multimedia CD-ROM, for example, is rarely wise. Instead, consider one of the following groups of tips to lead you to your niche.

Find a niche: Getting Started

- Locate the best sources of help and training available to you on campus or in your community, as well as a training schedule. Commit yourself to getting some training or one-on-one consultation.
- Locate equipment and software that are better than your own and accessible to you. You might need this for future work.
- Find out what technology is available in classrooms you can use, and labs or other locations your students can use.
- Buy a computer system at home and purchase Internet access from there.
- Identify undergraduate students who might be interested in independent study with or about technology, or graduate students who are tech-savvy and enthusiastic about using it for professional activities (research, presentations, etc.).
- Team up with persons who know more than you or have more courage when it comes to trying new things with technology, and network with them.
- Have lunch occasionally with creative friends.
- Use e-mail everyday (and the Internet for searching at least weekly).
- Identify internal grants, release time possibilities, and external fund sources related to your teaching and research interests.

Find a niche: Streamlining Office Management (while building tech skills)

- Learn how to filter your e-mail, create an electronic address book, and separate your student e-mail from your professional e-mail.
- Join a listserv in your discipline, but be callous: delete unread e-mail from listservs.
- Learn how to do your grades on a spreadsheet.
- Find five super Web sites in your discipline and bookmark them; access weekly for updates.
- Furnish your workspace with gentle lighting and colorful visuals to remind you (when you are using high-tech equipment) that you are a human being in a high-touch field, focusing on information, communication, and relationships—not equipment.
- Read, rather than skip, articles in your trade journals about technology use in your discipline, about good Web sites in your field, about ways other faculty are using technology for teaching and learning.
- Watch for technology humor; you'll need it!

Find a niche: Putting a plan into motion

- Inventory your current teaching philosophy and passions, your current research or presentation plans, and the "hot topics" valued by your department or division this year.
- Ask yourself "how can technology help me do any of this (better)?" If you are very new to technology, you may find it helpful to ask this question of more experienced colleagues, friends at other institutions, technology or faculty development support staff, or your children!
- Ask yourself if you are more interested in teaching with technology yourself or having your students use it to learn.
- Begin a log of ideas.
- Consider the time you want to commit to this technology "thang" this semester or this year, who you can enlist to collaborate on it with you (collaboration is much more successful than random "try-its"), and your current level of experience using technology for educational purposes.
- Evaluate the items on your log and the current demands on your time: what would you like to try this year that would support your current demands? what would you like to begin learning for a fresh idea next year?
- Apply for internal or external funding to support a project idea that excites you.

It is 1997 and technology is affecting all aspects of our lives, and the lives of our students. We are faculty, employed by institutions of higher learning who are interested in integrating technology that supports teaching and learning. We recognize both the hype, the potential, and the challenges associated with finding effective, efficient, and appealing ways to use technology in our teaching. Times could be better, but they could also be a lot worse! "We must prepare ourselves and our students for our future, not our past. And the future is not what it used to be!" (B. O. Barker, personal communication, April, 1997) That means finding meaningful ways to bring technology into our professional lives, especially ways that impact positively on our students. It does not mean we must give up our other passions. We must seek ways to integrate them together! I hope some of the ideas we have explored today will help you find ways to do that in your own environment. I invite you to share with me other tips for accomplishing the task as you discover them! Good luck!

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Mid-Western Educational Researcher

Call for Manuscripts

The *Mid-Western Educational Researcher* is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews, theoretical and methodological discussions that make an original contribution to the research literature, and feature columns. There are four issues of the journal published annually.

The journal is now accepting manuscripts for review and possible publication in 1997 and beyond. Manuscripts are submitted to blind reviews by at least two researchers with knowledge of the literature in the appropriate area. Furthermore, the editors will review the manuscript and make the final decision. The review process requires approximately three months.

Manuscripts are accepted from faculty, students, and professionals working in non-educational settings. Membership in the MWERA is not required in order to submit a manuscript for review. The editors encourage the submission of revised papers that have been presented at the annual meetings of the MWERA, AERA, and other professional organizations.

Submit four (4) copies of the manuscript with a cover letter to Deborah L. Bainer (see address in left margin). Manuscripts should conform to the style and format described in the *Publication Manual of the American Psychological Association*, 4th edition. All manuscripts should be typed, double spaced, on 8 1/2 x 11 paper with 1 1/2 inch margins on all sides. An abstract of less than 100 words should accompany the manuscript. The author's name and affiliation should appear on the title page only. Submissions typically are less than 20 pages in length. If the manuscript is accepted for publication, the author(s) will be asked to provide a disk file (WP 5.1 or higher on a 3 1/2 inch high density IBM formatted disk) as well as a printed copy of the final version. Please note that the editors reserve the right to make minor modifications in order to produce a concise and clear article.

Questions regarding the journal or the submission of feature columns should be directed to the editors.

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MID-WESTERN EDUCATIONAL RESEARCHER

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On the Cover

The history of the College of Education and Allied Professions dates back to 1872 when education courses were offered for local teachers. On March 14, 1916, the faculty of the College of Arts and Sciences recommended to the University Board of Directors that the Education Department be reorganized as Teachers College. A few years later the name was changed to the College of Education.

From 1920-1950, the infant college developed the continuity and stability sufficient to identify a mission and to build a constituency necessary for the sustained progress and expansion of the college. Quickly, the college assumed a major leadership role in the improvement of education in Northwest Ohio and Southwest Michigan. A large percentage of alumni became local teachers, superintendents, principals, district supervisors, and specialists in schools; others became college professors.

The 50s to 70s was an era of program growth and enhancement. Some of the major accomplishments of the faculty during this period were to undertake the first doctoral program at The University of Toledo, gain full accreditation by the National Council for the Accreditation of Colleges for Teacher Education, and initiate the honorary societies Kappa Delta Pi and Pi Lambda Theta. By this time, the college offered teacher education programs in most all teaching fields then recognized by the State of Ohio.

In 1979, to recognize the breadth and importance of all programs offered through the College of Education, it was renamed the College of Education and Allied Professions. Subsequently, the college further broadened its scope and opened new degree and program options outside teacher training whose core learnings are found in education professions.

In the last several decades the college has flourished. It has reconstructed its teacher preparation programs and revised most other programs as well as adding a variety of additional program options. The curricula has been approved and commended by the Ohio State Department of Education and has been accredited and commended under the revised standards of the National Council for the Accreditation of Teacher Education.

(*continued on inside back cover*)

Information for Contributors to the Mid-Western Educational Researcher

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Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

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Teacher's Lives and Beliefs: Influences That Shape the Teaching of U. S. History
Michael H. Romanowski, Ohio Northern University
2

An Exploratory Study of the Level of Reflection Attained by Preservice Teachers
Maria Elena Galvez-Martin, The Ohio State University at Lima
Connie L. Bowman, University of Dayton
Margaret A. Morrison, Hilliard City School District
9

1998 Conference Program Highlights
19

Conversations with Project Directors
Reading Recovery
Gay Su Pinnell, Carol Lyons and Diane DeFord, The Ohio State University
interviewed by
Emily Rodgers, The Ohio State University
23

Research Alive
Nontraditional Students in Higher Education: Meeting Their Needs as Learners
Mary K. Bendixen-Noe, The Ohio State University, Newark
Carmen Giebelhaus, Ohio Department of Education
27

Changes in the Personal and Teaching Efficacy Levels of Teachers Exposed to the FOCUS Model
Gary Russell, The Center for Professional Advancement
John W. Fraas, Ashland University
Isadore Newman, The University of Akron
32

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Teacher's Lives and Beliefs: Influences That Shape the Teaching of U. S. History

Michael H. Romanowski
Ohio Northern University

Abstract

The purpose of this study was to examine the complex influences that shape the teaching of U. S. history. Six secondary American history teachers participated in interviews and classroom observations centering on factors that affect their approach to the teaching of U. S. history. Findings indicate that there are various influences that play a significant role in determining the version of U. S. history students have the opportunity to learn. These include teachers' personal beliefs about religion and morality, the affect of history professors, and teachers' social class and family backgrounds. Several suggestions are made as to how teacher education programs can encourage pre-service teachers to examine the influences that shape their lives, classrooms, and students.

During a recent class observation, I was struck by a particular statement made by the student teacher. At the beginning of a lesson while passing out a handout on political party platforms, the student teacher attempted to place herself in a neutral space by stating that she neither favored nor opposed any of the parties' positions. She informed the class that her views were unimportant and her goal was simply to discuss how the individual political parties platforms differed.

The lesson began and the student teacher quickly omitted the areas regarding the current state of the economy and taxes and chose the abortion issue to start class discussion. Leading questions soon revealed this teacher's acceptance of abortion in cases of rape and incest. Gun control was next on the agenda, and as the discussion progressed, one student who opposed any type of weapons restrictions was asked by the student teacher "how often do you need assault weapons to kill deer?" When affirmative action surfaced, the class was introduced to a California case where a qualified white male was refused admission to medical school because of the use of quotas. A personal experience was introduced to further illustrate her point. Finally, additional issues such as funding for the arts and homosexual rights were dismissed as unimportant and the class moved to a videotape dealing with the presidential election.

Not bad for a brief lesson. Powerful messages were communicated to students through interaction with their student teacher. Students learned that abortion was acceptable in certain circumstances; government control of weapons was a good thing; affirmative action was not working; and other political issues such as taxes, state of the economy, funding for the arts and homosexual rights were not important enough to merit class discussion. More importantly, students learned that the teacher's views are of the highest value since these views dominated the direction of class discussion. Although the student teacher claimed to be neutral and none of the above messages were listed in her lesson plan, these and other messages did nonetheless flow predictably and consistently from her teaching and questioning strategies.

Clearly, this scenario confirms that the individual teacher's "personal theories and beliefs serve as the basis for classroom practice and curriculum decision making" (Ross, Cornett, & McCutcheon, 1992, p. 3). The manner in which teachers experience and understand the world plays a significant role in defining, selecting, and organizing information in their classroom. This, in turn, constructs the version of U. S. history that students have the opportunity to learn. In the following discussion, I address the complicated process of teaching U. S. history in secondary classrooms and the role that teacher's lives and beliefs play in shaping the U. S. history curriculum.

The Role of Beliefs and Life Experiences in Teaching

Few would argue that teaching is not a complicated task that is saturated with both explicit and implicit personal values and beliefs. Since teaching requires evaluation, interpretation, and choice, the process is never value-free or neutral. Located beneath the classroom practice of every teacher is an elaborate set of beliefs that are interwoven into the fabric of one's personal and professional life. This belief system serves as an organizing framework that establishes patterns of meaning, determines right and wrong, aids in historical interpretation, informs evaluations, and more or less forms a coherent picture or argument. These beliefs and values guide teachers' decisions regarding curriculum and instruction.

This complex belief system includes individual life philosophies, habits, personal experiences, and social histories, all of which permeate teachers' understanding of their work,

Special appreciation is extended to those teachers who shared their classrooms and life experiences. The author wishes to thank Kari Sowers for her diligent efforts transcribing tapes, for her helpful comments on earlier drafts of this manuscript, and her excellent proofing skills.

their students, the subject matter, and their roles and responsibilities as classroom teachers. In order to better understand the role beliefs play in teaching, these systems "may be conceived as minitheories of the mind, ways of characterizing language and behavior. . . they are part of the social and cultural truths to which individuals try to adhere in daily living" (Horowitz, 1994, p. 3). They can be better understood as "mental constructions of experience" (Sigel, 1985, p. 351) which are organized into concepts that are considered to be true and used to guide behavior (Pajares, 1992). Furthermore, belief systems serve as an individual's view of reality that holds enough truth to guide his or her thoughts and behavior (Harvey, 1986).

Belief systems are essential because not only do they shape the way teachers define and understand physical and social realities, but beliefs foster schools of thought and are unavoidably intertwined with knowledge. Teachers' beliefs have been the center of much research, and the concept has been labeled with a of variety terms. For example, Clark (1988) labels teachers' beliefs "preconceptions and implicit theorie" while Goodman (1988) terms them the "teachers' perspectives." In addition, the concept of "frame" is often used to describe the underlying assumptions that influence the teachers' actions in the classroom and their interaction with subject matter (Schon, 1983; Wyer and Srull, 1984; Barnes, 1992). This refers "to the clustered set of standard expectations through which all adults organize, not only their knowledge of the world but their behavior in it. We might call them the default settings of our daily lives" (Barnes, 1992, p. 16).

It is vital to understand that U. S. history teachers are not merely "passive transmitters of knowledge" (Elbaz, 1981, p. 43). Rather, each teacher brings his or her own individual experiences, beliefs, attitudes, and ways of looking at the world to the classroom. All teachers become "curriculum choice makers" who apply their beliefs and perspectives in making decisions about the particular content that they will teach (Ben-Peretz, 1990). These pedagogical decisions require that teachers engage in "a dialogue between the textbook, their own version of the subject matter, and the class" (Gudmundsdottir, 1990, p. 48). This belief guided works to select, organize, and frame materials to form a coherent picture or argument of a particular content area (Wade, Thompson & Watkins, 1994). The end result is the manipulation of knowledge and curriculum to fit the individual teacher's orientation toward the subject matter (see Figure 1).

As shown in Figure 1, there are multiple influences that play critical roles in the dialogue that teachers engage in regarding students, instruction, and subject matter. This dialogue is a complex process that continually constructs and

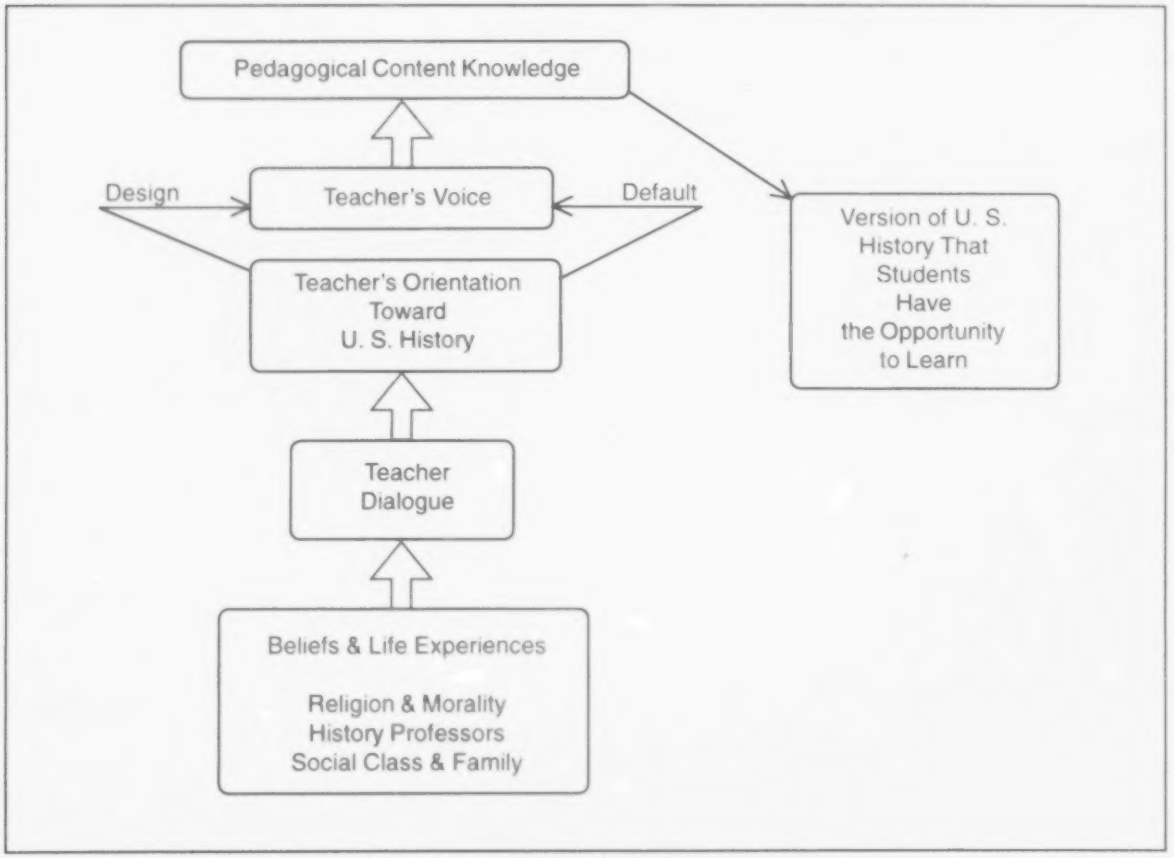

Figure 1. Teachers' understandings of the influences shaping the U. S. history curriculum

reshapes a teacher's orientation toward his or her subject matter. This orientation is then articulated to students through the teacher's voice. The concept of orientation can be referred to as "the specific ways in which an individual looks at the world" (Van Manen, 1977, p. 211). Often described as a world view, a "point of view, perspective, a person's way of looking at things, outlook, standpoint and so on" (Van Manen, 1977, p. 211), a person's orientation is composed of what he or she believes to be true, to be valuable, and to be real. As shown in Figure 1, an individual's orientation always surfaces in the classroom as the teacher's voice or personal curriculum.

Dialogue occurs differently for every teacher. Some teachers consciously design an orientation while others develop an orientation by default. For example, experienced teachers are possibly more aware of these influences, more attentive to the role that their voices play in the classroom and therefore play an active role in constructing their orientation. On the other hand, a novice teacher's orientation might be shaped by default with little consciousness on the part of the individual. Hence, this teacher may believe that he or she is objective and see little effect of his or her beliefs on the U. S. history curriculum.

The concept of voice has been central to the research on teacher knowledge, and it should be noted that other researchers have employed terms similar in meaning, such as personal or teacher's perspective, personal theory, implicit theory, personal practical knowledge, personal curriculum, and teacher's lives (Butt, Raymond, & Yamagishi, 1988; Clark & Peterson, 1985; Connelly & Clandinin, 1987; Gilligan, 1982; Goodson, 1991; McDonald, 1988). This type of research centers on the idea that teachers bring their lives to the classroom and that these lives are made up of a cluster of complex experiences, beliefs, and worldviews. More importantly, the teacher's life and belief system are instrumental in defining, selecting, and organizing information in which students have the opportunity to learn.

The end result of this process is pedagogical content knowledge (Gudmundsdottir, 1990). As shown in Figure 1, a teacher's orientation played out in the classroom surfaces as the teacher's voice or personal curriculum. This, in turn, becomes pedagogical content knowledge which contains two components, content and pedagogy (Grossman, 1989; Shulman, 1987). Pedagogical content knowledge is subject matter that has been reorganized with consideration of students, pedagogical strategies, and curriculum. This reorganization revolves around a teacher's orientation and includes not only selecting and omitting knowledge but also adopting teaching methods that are in line with the knowledge they believe students should learn.

From my own experiences talking with secondary social studies teachers about the teaching of U. S. history, they regularly introduce information about their own lives and beliefs into the discussion. Their descriptions illustrate how important experiences and beliefs are to the teaching process and how these play a fundamental role in constructing their orientation toward U. S. history and their interpretation of the texts they teach. Through this interaction with teachers, it becomes evident that the experiences and beliefs of teachers play a fundamental role in constructing their orientation toward U. S. history and their interpretation of the texts they teach. Therefore, in order to understand the influences that shape teachers' approaches to the teaching of U. S. history, we need to know more about teachers' lives. Thus, this study was designed to identify and determine how teachers' personal beliefs and life experiences play a role in shaping the manner in which they teach American history.

Information Collection and Analysis

The findings discussed in this study are based upon information gained from a previous research study that examines the multiple and complex issues and influences that shape the teaching of U. S. history (Romanowski, 1996) and a current study which uses both interviews and classroom observations. This research advances previous work by presenting findings from interviews and classroom observations of six secondary U. S. history teachers. The data consists of transcribed interviews, transcribed classroom observations, and observer's notes. The participants are six teachers, five men and one woman, with an average of sixteen years of experience teaching U. S. history in six different high schools. These six schools districts are characterized as rural[1] with student populations for grades 9-12 consisting of 254, 288, 301, 375, 886, and 1134.

Prior to the initial interview, teachers were asked to reflect upon, record notes, and provide examples of the possible factors that influenced their content selection and teaching of U. S. history. Individual teachers then participated in a 50-75 minute interview. Each interview focused on the teachers' conception of subject matter, the current courses they were teaching, students in the class, and their individual approaches to transforming content knowledge.

Every interview began with a teacher-initiated conversation based on previous reflection and thoughts regarding teaching. This increased the chance that information came from the respondent rather than solely being determined by the researcher's questions. Participants were also asked to supply examples from their teaching to solidify their points. Based on the information individual teachers presented, the researcher used probing questions that extended the information and allowed additional questions to emerge from the context. This permitted a more thorough understanding of the respondent's opinions and the reasoning behind them. All interviews were tape recorded and transcribed.

[1] The high schools represented in this study are categorized by the criteria used for field experience and student teaching placement. Rural schools are categorized by a student population of less than 10 percent minority while city schools contain more than 10 percent minority population.

1240

In order to validate the interviews, each participant was observed teaching U. S. history during several class periods. In several cases, classrooms were videotaped but when this was impossible, ethnographic field notes were taken. At the completion of each observation, all participants were interviewed for approximately 15-25 minutes. Each teacher was then asked to reflect on the lesson citing examples of factors and/or beliefs that might have shaped the particular content or approach to the topic. A brief dialogue occurred between teacher and researcher centering on information from the interviews and the observed lesson.

Each analysis began by listening to the taped conversation and then carefully reading the interview transcripts and field notes. Based on this reading, initial analysis consisted of coding the conversations using categories from the theoretical framework developed in the previous study[2]. These four theoretical categories were particularly relevant for the information and served as a starting point for the analysis. After close analysis of the language that teachers use, their own reflection about teaching, and classroom observations, various implicit beliefs and influences that shaping their teaching emerged and were grouped into the categories of religion and morality, history professors, and social class and family (see Figure #1). These elements make up teachers' orientation toward their subject matter. Eventually the orientation surfaces as a personal curriculum that creates value-laden impressions for students to learn.

Findings and Discussion

The Impact of Beliefs and Life Experiences

Religion and morality. According to the teachers in this study, it is clear that the beliefs they hold and their life experiences play a significant role in shaping their teaching of U. S. history. Since the teaching process is an extremely value-laden endeavor, teachers can never claim to be morally neutral or value free. Whether one realizes this or not, all teachers "cannot avoid imparting values in one way or another in the normal course of their activities. . . What we consider 'good,' 'right,' or 'important' constantly guides our practice, whether consciously or not" (Carbone, 1987, p. 10).

In this study, teachers indicated that religion and issues of morality seem to be determining factors on how they approach various historical events. The following dialogue demonstrates one teacher's awareness of his religious convictions that surface in the classroom.

Interviewer: What other factors influences the way you approach U. S. history?

Teacher: Certainly my Christian faith. . . that influences my outlook. I think it is important to get students to see the role that religion has played in people's lives. For example in Lincoln's second inaugural address, he is famous for having said malice toward none and charity for all. . . Few historians concentrate on the middle portion where he talks about why the Civil War happened. . . he [Lincoln] says that war was proof of a just God because both sides prayed to the same God and neither prayers were answered. . . Lincoln espouses the view that God plays a role in history. . . You don't have to acknowledge a belief in a God but obviously Lincoln believed in a God or he wouldn't have spoke in those terms. I think my students should be aware of those things and that is not preaching a view of religion, its just showing that the founders were religious. . . I don't think I teach this but God's hand is in every great historical. This probably affects many parts of my teaching. I might not be conscious of all this.

It is evident that this teacher's "Christian upbringing" plays a important role in his orientation toward U. S. history. Not only does he acknowledge the role religion plays in his pedagogical decisions about Lincoln and the civil war, but he is also aware that his belief that "God's hand is in every great historical event" might possibly shade his teaching of other historical events.

Although personal religious beliefs were not discussed by each participant, all teachers in this study expressed a concern for raising ethical issues, discussing what is right or wrong, or addressing morality within the history curriculum. The following comments by various teachers describe how issues of right and wrong shape their approach to U. S. history.

Teacher: Religious background makes a difference. What you think is morally right or morally wrong. The moral judgments you are passing on societies plays a role on how you teach.

Teacher: I guess learning from my dad the attitude of taking care of the poor. . . I think maybe this unselfish attitude. I want the kids to be aware of this. Yeah I bring this in. You owe it to get through the curriculum, you owe it to teach the course but you also owe to this dialogue [on moral issue].

It is evident from these teachers' comments not only that issues of right and wrong influence their teaching of U. S. history but also the concern for morality became evident in several classroom observations. For example, one lesson on the dropping of the atomic bomb centered on issues of right and wrong behavior; a lesson on life in the 1950's raised questions regarding the moral aspects of income distribution; and a lesson on the cold war also encouraged students to reflect upon the morality of decisions made at that time.

Exactly how teachers' religious and moral convictions affect their approach to teaching is still not very well under-

[2] This study used the following categories: 1) Community Expectations and Beliefs; 2) Student Beliefs and Issues of Resistance; 3) U. S. History Textbooks; and 4) Teacher's Voice/Personal Curriculum. For a further description see Romanowski, M. H. (1996). Issues and Influences That Shape the Teaching of U. S. History. In J. Brophy (Ed.), *Advances in Research on Teaching. Vol. 6. History Teaching and Learning* (pp. 291-312). Greenwich, CT: JAI Press.

stood, but we can be sure that all teachers impart morals and values upon their students. These examples demonstrate that the moral dimensions of teaching are inescapable and play a major role in determining what is considered legitimate or accepted views and understandings of U. S. history. The teacher's decisions as to what is morally appropriate shapes the teaching process by determining the perspectives and knowledge students have access to.

History professors. All participants described their own schooling experiences as factors that influenced their teaching, especially the role of professors of history. While in college, when pre-service history teachers study the subject matter that they will eventually teach high school students, they are not simply learning a body of facts. As they engage textbooks and class lectures, they are acquiring a particular understanding of the world.

Gudmundsdottir (1990) argues that after teachers have forgotten the facts of U. S. history learned in college, they still retain value-laden impressions. In turn, the impressions play an active role in shaping their pedagogical content knowledge and their interpretation of secondary U. S. history textbooks. These "value-laden impressions become their personal curriculum, the most hidden and least studied of all school curricula, yet it is the slice of secondary education that is most likely to remain with the student" (p. 47). The following comments made by teachers demonstrate how these impressions not only remain with these teachers but play an active role in their current teaching.

Teacher: In college, I found out that there was another whole history that I didn't know existed. For a long time, I resented that and thought, "Why do they [college professors] dig up all the dirt?" and "Why is there always the negative?" Sure it affects me now. I feel compelled to talk about some of the lesser noble qualities of many of our presidents and maybe other people. You might as well not have them go out of here with a rose colored view that is not true. It just is not true. . . I certainly have a broader view of history. There are still things that I learned in college classes that I bring into my classes today.

Teacher: I guess probably a big change for me was going to college during the sixties and being in the history and political science department. If there was anybody down there that was not a liberal democrat, I didn't meet any of them if they were there. They [professors] had a huge impact on me and I guess I could consider myself more of a liberal ever since. They [professors] certainly had a huge impact on me because it [college] totally changed my way of thinking about things.

It is evident that college professors influence the teaching of secondary U. S. history. Certainly the degree of influence would depend on both the individual professor and teacher. Not only did teachers describe this influence but it became obvious in several classroom observations. For example, one particular teacher described the NATO and Warsaw Pact by using an example given to him by a college professor. He added that this professor also taught ROTC classes and that this provided him with insight to this topic.

Social class and family. According to Bourdieu (1977, 1984), human thought is a form of socialized knowledge which is conditioned by cultural surroundings. Teachers' epistemologies reflect their cultural history and family social class background. Teachers enter the classroom with an understanding of the world, subject matter, and school that is filtered through beliefs, images, and myths which they have acquired from families, peers, media, and other life experiences.

Based on this process, teachers in this study indicated that the family and social class structure in which they were raised played an intricate role in constructing their identities, thus maintaining a significant role in shaping their teaching and views toward various historical events. The following excerpts demonstrate how parents and social class upbringing play a role in their selection, organization, and actual teaching of historical events.

Teacher: I think that family influences and values influence your political views, social and economic backgrounds. . . When it comes to teaching the industrial revolution and similar events, I know that I am pretty much a pro-labor person. Why? I grew up in a working class family where my father was a tire builder, my grandfather was a tire builder, I worked my way through college a member of United rubber workers. That [pro-labor viewpoint] comes from my family background and that gets brought into my lessons. For example, I would say I am rather opinionated when it comes to students who grew up in families where their dads are in management and don't like unions. They [students] come in here and listen to me and I paint a nice rosy picture of unions and what great things they did for the average American person.

Teacher: I try to rely on strengths from experiences that I have had. I can relate back to my family. . . my family is a blue-collar family and my dad never had much until he went to work in a plant. He was in UAW and as a kid. I can remember the strikes and not having much work and trying to take extra jobs to make ends meet till the strike was over. I can see how my dad has a strong union background because he owes everything he has to that movement and the gains that were provided for him. So it [blue collar family background] does influence how you think and I try to bring some objectivity to it but yet you have that personal experience.

Growing up in working class families with parents active in labor unions, these teachers are certainly aware of how those experiences influence their teaching. Although teachers' examples were limited to the teaching of the labor union movement, each teacher understands how parental influence based on working class values plays out in their classrooms. This was especially evident during class dis-

cussion when they address "white collar" or upper class students. Their professionalism enables them to be aware of the need for "objectivity," but as one teacher stated "you have that personal experience" and that personal experience shades the presentation of labor unions and management. Not only does this aspect of their identities affect the presentation of labor unions, it also dictated the amount of time spent on labor and management issues. Two teachers indicated that they enjoy and that they spend significant time on these and related issues during the school year, both feeling that maybe they place too much emphasis on this area.

Furthermore, one teacher stated that "I often teach from the disaffected point of view. . . I guess that is my background." This individual's social class background surfaced when he had the opportunity to teach from what is termed "bottom up history" where the emphasis is on social history or the history from the perspective of the "average" American. Similar comments were made by another teacher.

> Teacher: I came from a working class relatively poor background and I think it is important that we understand history from the ideas of those who lived it, those who were a part of history, not just necessarily from those people writing from their ivory towers in some fourth floor building on some college campus. I often share stories from my parents and grandparents who were hardworking people. . . you never get rid of that family upbringing.

This teacher demonstrates how stories from the "common people" and social history are important in his teaching. More importantly, these stories evolve from his own life experiences growing up working class. At times during our conversations, this individual expressed some degree of anger toward what he termed "privileged upper class" which would clearly surface in his classroom.

Suggestions for Teacher Education

We may not fully understand how an individual teacher's orientation is constructed, but we do know that beliefs and life experiences play a significant role in determining the version of U. S. history students have the opportunity to learn. My findings suggest that a better understanding of these factors and the role they play in shaping the social studies curriculum would help teachers to understand what they do, why they choose to do it, and the educational effect they have on students. I suggest several ways that teacher education programs can help pre-service teachers to examine the influences that shape the way they see the world and to begin to understand how these influences shape their individual classrooms.

First, teacher education programs must make opportunities for pre-service teachers to reflect about themselves regarding their beliefs and experiences and how these play a role in their understanding of schools, teaching, and curriculum. This type of self analysis is vital since teaching "involves knowing oneself well, one's attitudes, beliefs, values and prejudices as well as one's underlying conceptions of knowledge and knowing" (Balaban, 1995, p. 60). In response, teacher education programs must provide formal opportunities for students to reflect upon their own schooling and life experiences and determine their own belief systems and how these have been constructed. Balaban (1995) argues that "facing our biases openly, recognizing our limits imposed by our embeddedness in our own culture and experience, acknowledging the values and beliefs we cherish, and accepting the influence of emotions on our actions are extraordinary challenges" that must be addressed by teachers (p. 49).

Second, it is important for pre-service teachers to understand that there are multiple ways of viewing content knowledge and that these perspectives rely upon one's understanding of the world. Teacher educators must provide prospective teachers with the skills and knowledge necessary to uncover the values embedded in pedagogical content knowledge. For example, this can be accomplished through Schwab's (1978) "polyfocal conspectus." This is a system of critical reflection of subject matter through multiple perspectives that exposes and "lifts out" the values and ideologies embedded in the varying viewpoints. Each perspective is "studied, interpreted, discussed, and debated" (p. 346). The value-laden perspectives are then compared, to give prospective teachers a sense of the many possible interpretations and the strengths and weaknesses of their own perspective. Only when students are exposed to multiple interpretations and the other's perspective can they begin to develop complex understandings of historical events.

Finally, it is important to understand that although this research is limited to secondary social studies teachers, teachers of all levels must develop a critical eye when engaging their subject matter. There must be a strong emphasis on the foundations of education which enable students to reflect upon why they use should not use certain pedagogical approaches. Therefore, I think that it is important to replicate this study with both middle school and elementary school teachers in order to better understand the factors that shape teaching at those levels and then construct teacher education programs that better fit the needs of pre-service teachers.

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An Exploratory Study of the Level of Reflection Attained by Preservice Teachers

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Abstract

This exploratory study investigated the levels of reflection achieved over three quarters by graduate level preservice teachers. Levels of reflection were determined through analysis of their reflective journal entries on readings and field experiences. A repeated measures two factor ANOVA completely within design was used to systematically analyze changes in the level of reflection. Even without specific training in reflection and reflective thinking, some significant growth occurred in the levels of reflection as a result of asking preservice teachers simply to reflect. However, only one participant achieved the highest level of reflection.

Efforts to study and develop reflection or reflective thinking skills have been complicated by variations in the definition and use of those terms. Early in this century, Dewey (1904) introduced educators to the concept of reflection by describing it as thinking about and reflecting upon one's teaching experience. He later expanded this definition, referring to reflective thinking as "behavior which involves active, persistent, and careful consideration of any belief or supposed form of knowledge in light of the grounds that support it and further conclusions to which it tends" (Dewey, 1933, p. 9).

According to Van Manen (1991), reflection refers to the process by which teachers engage in aspects of critical thinking such as careful deliberation and analysis, making choices, and reaching decisions about a course of action related to teaching. Ross (1989) views reflection as "a way of thinking about educational matters that involves the ability to make rational choices and to assume responsibility for those choices" (p. 22). Shulman (1987) defines it as "a process that involves reviewing, reconstructing, reenacting, and critically analyzing one's own and the class' performance" (p. 15).

Reflection is currently viewed as an essential component of preservice teacher education programs because it is seen as the primary means by which preservice teachers become thoughtful about their experiences (Pultorak, 1993). Being reflective allows them to refine and improve their teaching. By applying critical thinking skills such as problem-solving, decision-making, and analysis from multiple perspectives to their experiences, preservice teachers can become more knowledgeable about themselves and their performance as professionals. Thus, reflection is the means by which preservice teachers may become reflective practitioners. Reflective practitioners are viewed as those who link theory to practice, balance learning and teaching styles with content, question and analyze their own practice from multiple perspectives, make decisions grounded in knowledge, and evaluate alternatives for future applications (Irwin, 1987; Reagan, 1993; Roth, 1989; Rust, 1988; Schön, 1987; Sparks-Langer, Simmons, Pasch, Colton, & Starko, 1990).

Reflective Abilities

Several researchers consider reflective abilities to be critical to the development of preservice teachers (Korthagen & Verkuyl, 1987; Richards, Gipe, Levitov, & Speaker, 1989; Ross, 1989; Roth, 1989; Rovegno, 1992; Tsangaridou & O'Sullivan, 1994). However, there is, as yet, no consensus in the field on its definition. Reflective abilities seem to represent the combination of reflective attitudes and cognitive processes that enable reflection to occur. It appears that when an action, experience, or idea stimulates an individual to become thoughtful about or to reflect upon that experience, both reflective attitudes and cognitive processes come into play.

Reflective attitudes, which Boud, Keogh, and Walker (1985) believe are an essential component of reflection, are directly related to the affective domain. Open-mindedness, responsibility for actions and/or decisions, and wholeheartedness are the three reflective attitudes that Dewey (1933) initially identified and that other researchers have more recently addressed (Cruickshank, 1987; Goodman, 1984; Ross, 1989; Ross & Hannay, 1986; Zeichner & Teitelbaum, 1982).

The following cognitive processes seem to be involved in reflection: (1) identifying dilemmas, situations or problems (Boyd & Fales, 1983; Ross, 1989; Rovegno, 1992); (2) describing and analyzing situations (Boud et al., 1985; Boyd & Fales, 1983; Cruickshank, 1986a; Goodman, 1984; Ross, 1989; Roth, 1989; Shapiro, 1985; Sparks-Langer & Colton, 1991; Zeichner & Liston, 1987); (3) evaluating information to clarify the situation (Boyd & Fales, 1983; Goodman, 1984; Kolb and Fry, 1975; Roth, 1989); (4) re-examining experiences from multiple perspectives (Boyd & Fales, 1983; Boud et al., 1985, Ross, 1989; Roth, 1989; Rovegno, 1992; Schoen,

1983); (5) associating new knowledge with previous knowledge, integrating new knowledge into existing schemata, and appropriating new knowledge (Boud et al.,1985; Rovegno, 1992); (6) synthesizing conflicting evidence (Rovegno, 1992); (7) relating teacher's actions to student learning (Rovegno, 1992); (8) imagining new alternatives (Rovegno, 1992); (9) providing alternative explanations of a classroom event (Ross, 1989); (10) articulating arguments based on evidence (Ross, 1989); (11) solving problems, and/or making decisions (Boud et al., 1985; Boyd & Fales, 1983; Cruickshank, 1986b, Dewey, 1933; Kolb & Fry, 1975; Parsons, 1983; Roth, 1989; Rovegno, 1992; Zeichner & Liston, 1987); (12) making inferences and developing and testing hypotheses (Boud et al., 1985; Boyd & Fales, 1983; Cruickshank, 1986b; Kolb & Fry, 1975; Roth, 1989; Schoen, 1983; Sparks-Langer & Colton, 1991); and (13) understanding the ethical and moral consequences of teaching (Goodman, 1984; Zeichner & Liston, 1987).

Developing Reflective Practitioners

In order to become reflective practitioners, preservice teachers need to develop and use reflective abilities. As Kuhn (1986) has pointed out, "the only way to improve teachers' thinking is to involve them in it" (p. 502). Dewey (1904) emphasized that people should be taught how to think by being involved in thinking, and that it could be even more important to prepare preservice teachers to think about their work than to teach them teaching strategies.

Reflective abilities are developed by "involving student teachers in critical, reflective thinking about their work" (Bolin, 1988, p. 48) and in a variety of reflective exercises (Kuhn, 1986). Dewey (1933) found that student teachers tend to be more reflective if the experiences upon which they are expected to reflect are real. Building on this idea, Roth (1989) suggests that in order to develop reflective capabilities preservice teachers need to have opportunities to reflect on their observations during field experiences and in real school settings. According to Bolin (1988), this enables students to analyze and interpret field experiences and classroom observations with a different attitude. In addition, students also discover assumptions and arrive at implications for classroom practice (Liston & Zeichner, 1987).

For Sparks-Langer et al. (1990), asking the *why* question is essential for the development of reflective thinking in preservice teachers. If students do not understand why something worked or did not work, they will have difficulty figuring out what to do next. Along these same lines, helping preservice teachers describe what happened, why it happened (its rationale), and how it could be improved encourages them to reflect (Cruickshank & Applegate, 1981; Roth, 1989; Van Manen, 1991; Smyth, 1989).

Preservice teachers differ in their willingness and abilities to reflect about teaching (Korthagen & Verkuyl, 1987; Richards et al., 1989; Ross, 1989). The ability to reflect also varies depending on the topic (Ross, 1989). In her study, Ross (1989) reported that the students achieved higher levels of reflection when they were able to apply research findings and critiques of teacher effectiveness research while acknowledging the strengths and limitations of it.

Richards et al. (1989) reported that some preservice teachers possess a natural ability to examine and critically question themselves. Other studies suggest that preservice teachers can value the role of reflection and therefore are able to improve the quality and amount of reflection (MacKinnon, 1987; Nolan & Huber, 1982; Richards & Gipe, 1988; Richert, 1988; Sebran, 1989; Wildman & Niles, 1987). As a consequence, preservice teachers can be helped to develop or improve their reflective abilities (Ross, 1990; Teitelbaum & Britzman, 1991; Wubbels & Korthagen, 1990). Reflective practice thus may be the means of developing analytical abilities as well (Ross, 1989; Tsangaridou & O'Sullivan, 1994).

In contrast, other studies found that some preservice teachers appear unwilling to reflect and are resistant to reflective experiences (Calderhead, 1992; Richards et al., 1989; Sebran, 1989; Zeichner & Liston, 1987). Zeichner and Liston (1987) believe that this resistance is due to the fact that some preservice teachers do not value reflection. Richards et al. (1989) reported that some preservice teachers are unable to reflect about their work because they see reflective assignments as meaningless and because they lack personal and psychological characteristics related to reflective abilities. These students also seem to confuse reflection with simple descriptions of classroom events.

There appear to be three factors related to the development of reflection in preservice teachers. These are: availability of time to reflect on a daily basis, time to actually develop reflective abilities, and a supportive and nonthreatening environment in which reflection occurs (Nolan & Huber, 1989; Richert, 1988; Sebran, 1989; Weade, 1987; Wildman & Niles, 1987). Reflective abilities may also be encouraged by implementing an indirect supervisory style during student teaching (Tsangaridou & O'Sullivan, 1994). Training supervisors in the use of an inquiry and reflective approach is as vital as having cooperating teachers encourage student teachers to question classroom practice. It is also important for student teachers to be exposed to, and trained within, this inquiry and reflective approach if they are to become more reflective (Zeichner & Liston, 1987). Troyer's study (1988) not only supports the need for training but also suggests that training in reflection should be introduced very early in the professional education component of teacher education programs.

A Model of the Reflective Process

Boud et al. (1985) aligned their "Model of Reflection in the Learning Process" (p. 20) with Dewey's (1933) description of a reflective activity process. They built upon Dewey's concept of reflecting on experience. This model has three broad components: (a) experiences, which are the antecedent stimuli for reflection; (b) reflective processes; and (c) outcomes, which include the consequences of be-

havior and new actions taken. The experiences component includes such things as behaviors, ideas, and feelings. The reflective processes component has three stages: (1) returning to experience, (2) attending to feelings, and (3) re-evaluating experience.

The first stage in the reflective processes component, *returning to experience*, involves remembering, reviewing, and reconstructing one's experience. This experience is described in detail, in written form, without judging. The preservice teacher is expected to view the experience from different perspectives. According to Boyd and Fales (1983), during this stage the student needs to be open to new information (which Dewey (1933) called "open-mindedness") from internal and external sources in order to process the event from multiple perspectives. This is when intervention and training can occur.

The second stage of the reflective processes component, *attending to feelings*, is seen by Boud et al. (1985) as essential to the reflective process. Feelings are viewed as promoting affective and cognitive learning. Positive feelings enhance learning, while negative feelings are obstacles to learning and hinder reflection. Therefore, negative feelings need to be removed or transformed for learning to take place. Writing can be a powerful means to discharge negative feelings (Rainer, 1980).

The third stage of the reflective processes component, *re-evaluating experience*, is vital because it includes association, integration, appropriation, and validation which determine whether the experience will become meaningful to the individual. At this stage, resolution occurs as the individual arrives at an adequate solution or a change in perspective (Boyd & Fales, 1983).

The outcomes component constitutes the end of the reflective process and prepares one for a new experience. Therefore, the outcome,

> ... may include a new way of doing something, the clarification of an issue, the development of a skill or the resolution of a problem. A new cognitive map may emerge, or a new set of ideas may be identified. The changes may be quite small or they may be large. They could involve the development of new perspectives on experience or changes in behavior (Boud et al., 1985, p. 34).

Assessing Reflection

The varied definitions of reflection have led researchers to develop a variety of assessment tools for determining to what extent, or at what level, reflection is occurring. For the purposes of this study, two frameworks were used to assess the levels of reflection attained by preservice teachers in, respectively, reading journals and field journals.

Ross' (1989) framework, Criteria for Assessing Levels of Reflection, was designed specifically to assess levels of reflection on theory-to-practice papers. The framework uses a three-tier leveling process with subcategories within each tier. A summary of Ross' framework is presented in Table 1.

Table 1
A Summary of Ross' Criteria for Assessing Levels of Reflection

Level 1: Low
1.1 give examples of teacher implementing or not implementing a finding from research;
1.2 describe a teacher's practice as being only partially consistent with research;
1.3 agree with a position taken in an article by restating the author's arguments.
Level 2: Moderate
2.1 provide a good critique of practice from one perspective;
2.2 analyze in detail a teaching practice;
2.3 recognize that instruction must vary based on aims and student characteristics;
Level 3: High
3.1 view things from multiple perspectives;
3.2 recognize that teacher actions have impact beyond instruction.

Using this framework, Ross (1989) found that students' levels of reflection on the different papers ranged from low to high (low: 44%, moderate: 34.4%, and high: 21.6%). She explained that this variability was mainly due to the topic about which the students were reflecting. Although she acknowledged that students' abilities to reflect may change over time, her data did not show that levels of reflection changed during a semester-long course.

Although Ross (1989) reported that most (78.4%) of the papers were identified at Levels 1 (low) and 2 (moderate), she also noted that almost all students demonstrated a high level of reflection in some of their papers. Although only 22% of the papers were rated at the highest level of reflection, Ross suggested that undergraduate preservice teachers can achieve the highest level of reflection if they are able to view things from multiple perspectives, recognize the importance of making decisions based on multiple factors, and are made aware of the impact of context on teaching. She concluded that "the ability to reflect about practice does not develop in one course" (p. 30). She did point out that a single course could introduce preservice teachers to reflective thinking and help them develop their reflective abilities.

Galvez (1995) proposed a framework for analyzing how preservice teachers progress in reflection. A refined version of that framework which focuses on real school classroom settings was used for this study (see Table 2). Galvez' framework is an adaptation of earlier frameworks developed by Ross (1989) and Smith and Pape (1991). This adaptation was necessary because no framework could be identified that would allow assessment of reflection from multiple perspectives on real classroom settings, even though several authors feel that viewing experiences from multiple perspectives is critical in the reflective process (Boud et al., 1985;

Table 2
Galvez' Assessment for Levels of Reflection

Scale	Levels of Reflection
0	No mention of pedagogical concepts or skills. Comments based on self and feelings (Smith & Pape, 1990).
1	General explanation of instructional/non-instructional events in terms of personal experiences without analyzing or predicting consequences based on teaching behavior/performance (Smith & Pape, 1990).
2	Plain description of instructional/non-instructional events in a technical way without analyzing teaching performance or the rationale behind it (Ross, 1989; Smith & Pape, 1990).
3	Focuses on only one aspect of teacher behavior and arrives at implication (Ross, 1989).
4	Critiques teaching behavior from one perspective, that is from the students' in terms of its impact on students and learning outcomes (Ross, 1989) as well as how students behavior is addressed.
5	Analyzes in detail teaching behavior from the teachers' perspective during instructional and/or non-instructional time. Discriminates between effective and non-effective instruction (Ross, 1989). Analyzes how teachers handle misbehavior in a very specific way and arrives to implications about how to deal with similar situations.
6	Acknowledges that instruction is based on objectives and students' characteristics and that a variety of teaching strategies would be used to match the students' different learning styles (Ross, 1989). Analyzes students' progress and its implications related to teaching behavior, instruction, and students' characteristics and learning styles.
7	Evaluates instructional/non-instructional events from multiple perspectives. "Acknowledges impact of specific situations and contexts of learning" (Smith & Pape, 1990, p. 6). Provides recommendations/suggestions for improvement and for further implementation by using if-then-because statements (Smith & Pape, 1990).

Boyd & Fales, 1983; Ross, 1989). Galvez' framework offers ratings on a zero- to seven- point scale, moving from reflections from a singular perspective to reflections from multiple perspectives (teacher, student, parents, community).

This study was structured following Boud et al.'s (1985) Model of Reflective Processes which has three broad components: Experiences, Reflective Processes, and Outcomes. In order to be able to assess the level of reflection, it is first important to know what the students are reflecting about. They must describe something they learned or something they have experienced (Experiences). Second, they must expand on the idea or experience by reconstructing it, relating it to other personal experiences and feelings, and arriving at a conclusion by associating, integrating, appropriating, and validating that experience or idea (Reflective Processes). Third, they must arrive at an adequate solution or change in perspective (Outcomes). Ross' (1989) and Galvez' (1995) frameworks were created to assess the levels of reflection (Reflective Processes) based on an instructional event (Experiences).

The purpose of this exploratory study was to investigate achieved levels of reflection over time by preservice teachers when they were asked simply to reflect on their field experiences and course content. The specific research question was:

What levels of reflection are achieved by preservice teachers on readings and field experiences and how do the levels of reflection vary over time?

Method

This study was designed to explore changes in reflective thinking over a three-quarter period among preservice teachers who were not trained in reflection or reflective thinking. The investigation was accomplished during the middle three quarters (autumn, winter, and spring) of the five-quarter graduate level teacher certification program. During their first and last quarters (summer 1995, summer 1996), the students were involved in introductory and culminating courses respectively. The three quarters included in this study, encompassed all methods courses, field experiences, and student teaching.

Based on the Boud et al. (1985) model, readings and field experiences (Experiences) provided the context for the students' reflections, which were then expressed in their journal writing (Reflective Processes). The participants were free to implement their conclusions or alternative ideas for classroom instruction during field assignments, which included student teaching (Outcomes).

Participants

The participants in this study were 21 preservice teachers in a graduate elementary teacher certification program at one large midwestern university. Four students were males; 16 were females. The participants were at a typical age for university graduate students (range = 22-24 years),

with the exception of four nontraditional students (over age 24). The participants were enrolled during autumn (quarter one) and winter (quarter two) quarters in social studies, science, math, and language arts methods courses. The participants were also involved in one field experience during each of those quarters. Student teaching occurred during spring quarter (quarter three).

Procedures

The participants kept reflective journals as a part of their regular course work. Permission was granted to the authors to use the journal entries for this study; however, the participants were not informed about the specific objectives of the study.

During the first class meeting, in quarter one, the participants were given a 15-minute orientation to the journal writing required for social studies methods. They were told that they would be keeping two types of journals: a reading journal for social studies, and a field journal.

Participants were told that reading journals were to be handed in, weekly, for five weeks. Reading journals would contain responses to selected readings supplemental to the textbook in social studies. The participants were asked to talk about what they had learned from the readings that was most meaningful and valuable to them and to discuss ways in which they would be able to incorporate those learnings into their future teaching.

For the field journals, participants were told that they were to complete three journal entries, per quarter, for quarters one and two. These were to be handed in at the end of each quarter's field experience. During quarter three (student teaching), six journal entries were to be written per week. These would be turned in every other week for eight weeks. The field journals (which included both field experience and student teaching) would contain any instructional or non-instructional event that caught their attention, a description of it, and explanations of how it could be improved (Cruickshank, Kennedy, Williams, Holton, & Fay, 1981; Van Manen, 1991).

Throughout the study, participants had the freedom, through their field journals, to address any event, emphasize any aspect of it, state their feelings, and suggest how its handling could be improved. They were simply asked to state what they learned, and how they would implement that learning in the near future or use it to improve a particular situation.

Data Collection

The data (journal entries) for the readings were collected as planned on a weekly basis for five weeks during class sessions. Field experience journals were collected at the end of each quarter as planned; and the student teaching journals were collected, as planned, every other week for eight weeks. The principal investigator collected the data.

From each participant, five reading journal entries were collected during each quarter for quarters one and two. The instructor wrote simple evaluative comments (e.g., unclear please expand, good point) on the journal entries and returned them to the participants within one week. Care was taken to avoid prompting or leading students to higher levels of reflection. The instructor returned papers that were sketchy and asked that they be redone or expanded.

Three field experience journal entries were collected during each quarter, for quarters one and two, and 24 journal entries were collected for the student teaching experience, quarter three. Therefore, from each participant a total of 40 journal entries were collected. This included readings and field journals. Each journal entry averaged from one-half to one typed page in length.

The reading and field journal entries were transcribed by two experienced secretaries. Before the transcription took place, in order to ensure confidentiality, the principal investigator coded each journal entry per individual, type of journal and quarter, and the name of each participant was removed. Copies were then made for each rater.

Data Analysis

The data were organized into data sets. Five data sets were created for each participant as follows:(1) the five reading journal entries for quarter one, (2) the five reading journal entries for quarter two, (3) the three field journal entries for quarter one, (4) the three field journal entries for quarter two, and (5) the 24 field journal entries for quarter three. Each participant was thus assigned a total of five ratings. In total, there were 105 data sets in this study.

The unit of analysis was a conceptual unit, referred to by Bainer and Cantrell (1992,1993) as a reflective unit. Each conceptual unit contained a single idea or thought about a particular topic or event. The conceptual units ranged from a single sentence to a paragraph in length, which in some cases represented the entire journal entry. The conceptual units were identified by the principal investigator.

A level of reflection was assigned to each conceptual (reflective) unit. Thus, one or more levels of reflection were assigned to each journal entry. When there were multiple ratings for a single journal entry, those ratings were averaged to achieve a single level of reflection. As explained above, all journal entries of a similar type (readings or field) per quarter, were organized into a single data set. For each data set, a single overall level of reflection was assigned which was derived by calculating the level of reflection most frequently identified on the journal entries within that data set.

Raters and Ratings. Three raters were trained in the use of two frameworks for assessing levels of reflection: Ross (1989) and Galvez (1995). This process involved a two-day training of three hours per day. A standard procedure was used for training the raters on each framework. First, the framework was explained and discussed, focusing especially on the criteria to be used in assigning a level of reflection to a conceptual unit which could be part of a journal entry or a whole journal entry, as described above. Second, the raters worked collaboratively to rate several

conceptual units which were not analyzed as part of this study. Third, the raters assigned average ratings for journal entries as needed. Fourth, the raters assigned an overall rating to the combined journal entries for each data set. Fifth, practice ratings were compared, analyzed and discussed. Sixth, at the end of the final practice session, each rater was given several data sets with journal entries to rate independently. For the final practice session, the inter-rater reliability was .98 using Cronbach's alpha (Bloom, Fischer, & Orme, 1995).

All data sets were rated following a blind rating process. The inter-rater reliability was .95 (Cronbach's alpha). The data sets were organized into the two types of journals: the reading journals with two sets (quarters one and two) and the field journals with three sets (quarters one, two, and three). The journals were then paired with their respective assessment instruments. That is, reading journals were evaluated using Ross' (1989) criteria and field journals were evaluated with Galvez' (1995) framework. The investigator then coded each data set (readings: one and two; field: one, two, and three). To ensure that the raters would not be able to identify quarters, the reading data sets from quarters one and two were combined into one cluster, and the field data sets from quarters one, two and three were combined into another cluster.

Validity. Content validity and face validity for each of the frameworks were established by having three researchers in the field of teacher education examine the instruments; they agreed that each of the instruments measured aspects of teacher reflection. After the data were collected, a representative sample of the participants examined the two frameworks and agreed that the content of the instruments related to the content of their journals. After ratings of the data were completed, member check was used to corroborate results. A representative sample (25%) of the participants were asked to verify that the ratings assigned to their data sets accurately reflected what they wrote. The one hundred and five data sets were analyzed quantitatively by using a repeated measures two factor ANOVA completely within subjects design on (a) the overall ratings assigned to the reading data sets rated with using Ross' (1989) framework, and (b) the overall ratings assigned to the field data sets rated with Galvez' (1995) framework. The SAS statistical program was used for this analysis.

Results

Levels of reflection achieved by the participants on the readings data sets are displayed in Table 3.

During quarter one, all the ratings were at Ross' (1989) lower level of reflection (Level 1). During quarter two, while many of the ratings remained at the lower level of reflection (Level 1) there was some movement to the moderate level of reflection (Level 2). This movement is corroborated by the means as well.

Table 4 summarizes a repeated measures two factor ANOVA which was conducted to test for completely within subjects effects on selected readings on Ross' (1989) levels of reflection.

This analysis revealed that the interaction between quarter one and quarter two reflections was statistically significant ($F(2, 40) = 7.51$, $p < .05$)). A post-hoc Tuckey test confirmed the statistical significance at an experiment wise error rate of .05. These results indicated that Ross' (1989) level of reflection on the readings achieved in quarter two was significantly higher than the level of reflection achieved in quarter one.

Galvez-Martin's levels of reflection achieved by the participants on the field data sets are displayed in Table 5.

Some movement was observed over the three quarters towards higher levels of reflection. For purposes of clarification, Levels 0, 1, and 2 were considered the lower levels, Levels 3, 4, and 5 were considered the intermediate levels, and Levels 6 and 7 were considered the highest levels of reflection. During quarter one, most of the ratings were found between the lowest (Levels 1 and 2) and intermediate (Level

Table 3
Ross' Levels of Reflection on Readings in Frequencies, Percentages, and Means

Levels	Quarter 1						Quarter 2					
	R1		R2		R3		R1		R2		R3	
	F	%	F	%	F	%	F	%	F	%	F	%
Level 1	19	91	21	100	21	100	17	81	8	38	15	71
Level 2	2	9	0	0	0	0	4	19	13	62	6	29
Level 3	0	0	0	0	0	0	0	0	0	0	0	0
Totals	21	100	21	100	21	100	21	100	21	100	21	100
M	1.37		1.30		1.30		1.41		1.78		1.53	
Overall					1.32						1.57	
SD	0.25		0.00		0.00		0.29		0.43		0.37	
Overall					0.08						0.23	

R1 = Rater 1; R2 = Rater 2; R3 = Rater 3; F = Number of Ratings; % = Percentages

Table 4
A Repeated Measures Two Factor ANOVA Completely Within on Selected Readings

Source	*df*	*SS*	*S*	*F*	*P*
Subjects	21	1.43			
Quarter One Reflections	1	1.98	1.98	18.02	0.0004
Subjects by Quarter	20	2.20	0.11		
Quarter Two Reflections	2	0.53	0.26	3.48	0.0404
Subjects Within	40	3.03	0.08		
Quarter Reflections Within	2	0.97	0.49	7.51	0.0017*
Error	40	(2.59)	(0.07)		
Total	125	12.73			

Note. Values enclosed in parentheses represent mean square errors.
*$p < .05$.

3) levels of reflection (Level 1). During quarter two, most of the ratings were found between the lower (Level 2) and intermediate (Levels 3 and 4) levels of reflection. During quarter three, most of the ratings were found between the intermediate (Levels 4 and 5) and higher (Level 6) levels of reflection. It was observed that the ratings moved progressively from lower to intermediate and in some cases to higher levels of reflection. Overall, 90% of the participants gained in levels of reflection from quarters one to three.

The overall mean of reflection for quarter three (M = 4.43) was significantly higher than the means for quarters one (M = 2.59) and two (M = 2.76). This showed a growth over the three quarters of two levels (see Table 5).

Table 6 summarizes a repeated measures two factor ANOVA which was conducted to test for completely within subjects effects on field experiences rated using Galvez' (1995) levels of reflection.

This analysis revealed that the within subjects interaction between (a) quarters one and three, and (b) quarters two and three reflections was statistically significant ($F(4, 80) = 12.78$, $p < .05$)). A post-hoc Tuckey test confirmed that these interactions were statistically significant at an experiment wise error rate of .05. The main effects then revealed that most of the cells were significantly different. These results indicated that Galvez' (1995) level of reflection achieved in quarter three was significantly higher than the level of reflection achieved in quarters one and two. These data indicated that journal entries based on student teaching (quarter three) were written at a significantly higher level of reflection than journal entries from the field experiences during quarters one and two.

Table 5
Galvez' Levels of Reflection on Field Experiences in Frequencies, Percentages, and Means

Levels	Quarter 1						Quarter 2						Quarter 3					
	R1		R2		R3		R1		R2		R3		R1		R2		R3	
	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%	F	%
Level	0	0	0	0	0	0	1	5	1	5	0	0	0	0	0	0	0	0
Level 1	4	19	7	33	7	33	3	14	3	14	0	0	0	0	0	0	0	0
Level 2	6	29	3	14	4	19	9	43	9	43	6	29	2	9	2	9	3	14
Level 3	4	19	6	29	6	29	3	14	3	14	7	33	1	5	1	5	2	9
Level 4	2	9	4	19	3	14	3	14	3	14	3	14	5	24	5	24	9	43
Level 5	5	24	1	5	1	5	2	10	2	10	5	24	8	38	8	38	7	33
Level 6	0	0	0	0	0	0	0	0	0	0	0	0	4	19	4	19	0	0
Level 7	0	0	0	0	0	0	0	0	0	0	0	0	1	5	1	5	0	0
Totals	21	100	21	100	21	100	21	100	21	100	21	100	21	100	21	100	21	100
M	2.91		2.48		2.38		2.48		2.48		3.33		4.67		4.67		3.95	
Overall					2.59						2.76						4.43	
SD	1.48		1.29		1.24		1.33		1.33		1.16		1.28		1.28		1.28	
Overall					1.21						1.13						1.12	

R1 = Rater 1; R2 = Rater 2; R3 = Rater 3; F = Number of Ratings; % = Percentages

Table 6
A Repeated Measures Two Factor ANOVA Completely Within on the Field Experiences

Source	*df*	*SS*	*S*	*F*	*P*
Subjects	21	110.74			
Quarter Reflections (One & Three)	2	130.17	65.09	20.12	0.0001
Subjects by Quarter	40	129.39	3.24		
Quarter Reflections (Two & Three)	2	0.77	0.39	0.77	0.4707
Subjects Within	40	20.12	0.50		
Quarter Reflections Within	4	19.93	4.98	12.78	0.0001*
Error	80	(31.19)	(0.39)		
Total	188	442.30			

Note. Values enclosed in parentheses represent mean square errors.

*$p < .05$.

During the data analysis, it was observed that the journals' content corresponded to the Reflective Processes component of Boud et al.'s (1985) Model and was the expected outgrowth of the first component (Experience). The analysis using Ross' (1989) and Galvez' (1995) frameworks, provided insights not only about the level of reflection that the participants achieved but also about how the level of reflection varied across quarters (Reflective Processes). This analysis also revealed that the journal entries did not represent elements of Boud et al.'s third component (Outcomes) even though the participants had opportunities to do so.

Conclusions

In this study, preservice teachers were asked to participate in reflective activities, but they were not specifically trained in reflection or reflective thinking. Over two quarters, even without training, the average levels of reflection on readings did increase significantly from Ross' (1989) lowest to moderate levels of reflection, that is from Level 1 to Level 2. Over three quarters, even without training, the average level of reflection on field experiences did increase significantly from Galvez' (1995) lowest to intermediate levels of reflection, that is from Level 2 to Level 4. These results appear to align with Dewey (1904) and Kuhn (1986) who suggest that, in effect, preservice teachers learn to reflect by reflecting.

There could be several explanations for our results. First, the results may be related to the length of the study (three quarters) which allowed sufficient time for changes to be measured. A second possible explanation may be the age, greater maturity, or experiences of some of the participants. Third, some connection between requisite cognitive ability and learning may have occurred during this period that promoted a change in level of reflection.

Fourth, the fact that the level of reflection during student teaching (quarter three) was significantly higher than the levels of reflection achieved during field experiences (quarters one and two) may be related to the nature of the student teaching experience. That is, student teachers are totally involved in the field experience, whereas during quarters one and two, the field experiences are linked with methods courses and there is little involvement in classroom teaching. This explanation would lend support to other researchers who have found that the greatest growth in reflection occurs in the field experiences, that is, in real classroom settings (Bolin, 1988; Dewey, 1933; Roth, 1989; Liston & Zeichner, 1987).

Only one participant in the study demonstrated the highest level of reflection (i.e., analyzing teaching situations from multiple perspectives, and evaluating and adjusting one's own teaching performance in response to children's individual differences). Most participants achieved only intermediate levels of reflection.

Explanations for these results may include the following. First, they could be due to the lack of specific training for the participants in reflection and reflective thinking. Second, the participants may not yet have developed the (pre)requisite cognitive abilities that would enable them to move towards the highest levels of reflection. Third, there may exist some cognitive processes related to reflection that are not adequately measured by the two selected frameworks.

Our findings suggest that when preservice teachers are given opportunities to reflect over time, many do grow in their level of reflection even without specific training. However, it seems clear from these results that simply asking preservice teachers to reflect will not turn them into practitioners who consistently reflect at the highest levels, at least not over a three quarter period of time.

In terms of limitations of this study and recommendations for future studies, this sample size was small and the nature of the sample, being at the graduate level, limits our ability to generalize these findings to other populations. Further studies should be designed to replicate this work with undergraduate preservice teachers. A limited number of frameworks were used to assess levels of reflection, and future studies should also include other frameworks such as Van Manen's (1977) and Zeichner and Liston's (1985), which would allow direct comparison of a variety of theoretical frames. One framework should also be applied across differ-

ent types of data (journals) in order to identify possible differences in achieved levels of reflection.

Further empirical studies are needed to measure achieved levels of reflection over a longer period of time. Such studies would help to determine whether the growth rate continues when preservice teachers are given opportunities to reflect, but are not given specific training in reflection. Related studies are also needed to investigate possible relationships among cognitive developmental maturity, critical thinking skills, and achieved levels of reflection over time.

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Mid-Western Educational Research Association
1998 Annual Conference Highlights
October 14 - 17, 1998
Holiday Inn Mart Plaza, Chicago, Illinois

The 1998 Annual Meeting of the Mid-Western Educational Research Association (MWERA) returns to Chicago with an exciting program of speakers, workshops, peer-reviewed papers, and activities for participants and their families. Three dynamic invited speakers focus each day's activities, with peer-reviewed sessions forming the backbone of the conference. In addition, workshops will be scheduled throughout the four-day meeting, allowing attendees to participate in a wide range of focused, longer-term sessions on a variety of interesting topics. Attendees can choose from a variety of session formats, including:

- ✔ Paper Presentation (3-5 papers per session with a Session Chair and Session Discussant)
- ✔ Roundtable Discussion/Poster (for heightened presenter-attendee interaction)
- ✔ Symposium (focusing on specific topics from a variety of perspectives)
- ✔ Workshop (longer-term focused work on a topic of interest)
- ✔ Alternative Format (with a range of different time lengths and interactive activities)

Sessions have been organized around the themes of 11 different divisions:

- A - Administration and Leadership
- B - Curriculum Studies
- C - Learning and Instruction
- D - Measurement and Research Methodology
- E - Counseling and Development
- F - History and Philosophy
- G - Social Context of Education
- H - School Evaluation and Program Development
- I - Education in the Professions
- J - Postsecondary Education
- K - Teaching and Teacher Education

Chicago's Holiday Inn Mart Plaza will host the 1998 annual conference. This wonderful facility boasts spacious, comfortable guest rooms, excellent meeting facilities, and an indoor pool and exercise room. It is centrally located to many shops and restaurants just within a short, safe walk of the hotel. Chicago's museums, planetarium and aquarium, theater district, and lively night life are also just minutes from our hotel location!

The Mid-Western Educational Research Association offers scholars and practitioners, researchers and instructors, and educators from all levels and perspectives an opportunity to share ideas with others in a supportive environment of collaboration. The MWERA meeting is where people from all over the United States come to hear the latest in educational thought and progress, and to make new contacts and renew existing acquaintances, in a spirit of professional friendship and collegiality!

Invited Speakers
to the
1998 Annual Meeting of the Mid-Western Educational Research Association

Dr. Robert C. Albrecht
Western Governors University

Dr. Robert C. Albrecht serves as the Chief Academic Officer of the Western Governors University, heading the Colorado office of the University. In the summer of 1996 he had been named as co-director of the University; in 1997 at the first meeting of the Board of WGU, he was designated the Chief Academic Officer. From 1989 until 1997, Dr. Albrecht served as the Associate Vice President of the University of Colorado, chiefly dealing with technology across the four campuses of the University. After degrees from Illinois, Michigan and Minnesota, where he was awarded the Ph.D. in American Studies, Albrecht taught at the University of Chicago and the University of Oregon. He then served in positions in academic affairs at the University of Northern Colorado and the Montana University System until 1989. Dr. Albrecht's publications include books and journal articles in American literature, academic administration and distance learning.

"Western Governors University: New Challenges, New Technologies, New University"

Over two years ago representatives of the governors of sixteen western states met and drafted plans to form the largest "virtual university" yet conceived. Their plan called for the creation of a consortium of government and private industry to form a new institution. This new partnership would list specific competencies in selected academic and technical areas, then award degrees in the fields to students who mastered these competencies. Participating colleges, universities, and corporations could market qualifying distance learning courses to prospective students, who would then take these courses in an eclectic mix of in-person, traditional distance education, and Internet-based forums. After two years of preparation, and over $9-million dollars in fund raising, WGU will open its virtual doors in the next few months to its first on-line students. Dr. Albrecht's remarks at the Keynote address (Thursday, October 15th, 9:30am through 10:20am) and Follow-Up Discussion (10:30am through 11:50am) will focus on the aspirations of the competency-based, distance education model being implemented by WGU, and the current and future challenges facing both WGU and traditional institutions of higher education. He will also overview the operations and technologies of WGU, giving attendees a glimpse into the university of the 21st century.

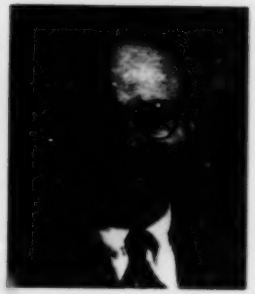
Dr. Judith M. Gappa
Purdue University

Dr. Judith M. Gappa is the Vice President for Human Relations and a Professor of Educational Administration at Purdue University. She is a graduate of the Institute for Educational Management of Harvard University, after earning an Ed.D. in Educational Administration from Utah State University. Dr. Gappa spent two years as a Senior Associate in the Washington, D.C. office of American Association of Higher Education conducting research on a variety of topics including changing faculty roles and responsibilities. Prior to that she served as an Affirmative Action/Equal Opportunity Programs Director at Utah State University and an Associate Vice President for Faculty Affairs at San Francisco State University. She is the author of over 28 books, monographs, articles, and research reports; is a member of several editorial boards and higher education associates, and

a frequent presenter and speaker at local, state, and national meetings. Her 1993 book titled The Invisible Faculty: Improving the Status of Part-Timers in Higher Education (co-authored with David W. Leslie) is already considered a classic study on the status of part-times in higher education.

"The Academic Career in the 21st Century: New Options for Faculty"

The academic career in the later 20th and early 21st century is changing, in response to both internal and external pressures. The decentralization of colleges and universities, changing workloads, and issues surrounding achieving balance in personal and professional lives are making the professorate a much different occupation that it once was. One of the most notable changes has been that today less than 50% of faculty occupy tenure-track positions (with 26% of all full-time faculty occupying non-tenurable positions). Dr. Gappa will investigate these pressures, and how universities are responding to them with both modifications to the traditional system of tenure and outright alternatives to tenure, in her Luncheon Address (Friday, October 16th, Noon through 1:30pm) and Follow-Up Discussion (Friday, October 16th, 1:40pm through 3:00pm). She will discuss stopping the clock, post-tenure review, and retirement incentive plans that are affecting tenure-track faculty. Dr. Gappa will also present other models of full-time non-tenurable appointment, and the features of these alternative employment arrangements that might make them viable career options for many people. Faculty at all stages of their careers, including graduate students and new career faculty, will want to attend to consider the changing nature of the profession and hear Dr. Gappa's predictions for the next decade 9and beyond) in higher education.



Dr. Kim K. Metcalf
Indiana University

Dr. Kim Metcalf is an Associate Professor of Curriculum and Instruction in the School of Education at Indiana University. He currently serves as the Director of the Junior Achievement Center for Evaluation. Dr. Metcalf is a 1989 graduate of The Ohio State University, where he received his Ph.D. in Teacher Education and Educational Research and Evaluation. Dr. Metcalf's work has focused on the relationship between instructional/classroom practices and desirable student outcomes, and on the use of alternative and simulated experiences in the professional development of teachers. His work has appeared in a variety of professional and scholarly journals and has been honored by several scholarly associations, among them The Ohio State University, The Association of Teacher Educators. He is also a co-author of the chapter "Training within Teacher Education" in the Handbook of Research on Teacher Education and The Act of Teaching. Most recently Dr. Metcalf has led a team of researchers in conducting a broad scale evaluation of the highly contentious Cleveland Scholarship (Voucher) Program.

"Free Market Policies and Public Education: At What (Opportunity) Cost?"

The issue of school choice, particularly the use of private school tuition vouchers, is among the most contentious issues facing education in the U.S. today. Importantly, public support and political momentum make it likely that more and more states will implement programs which allow parents to use state funds to send their children to the public or private school of their choice. In spite of, or perhaps because of the passion of the debate, both advocates and proponents rely primarily on emotion to support their positions. Largely ignored are previous and on-going studies which provide insight into the likely effects of public-private voucher programs. It is this knowledge base and its implications for the future not only of voucher programs, but for public education as well that will be considered. Dr. Metcalf will investigate the implications of vouchers, and provide some insights from his current work on the Cleveland Scholarship Program, at the Presidential Address (Saturday, October 17th, 9:30am through 10:20am).

The 1998 annual conference is on the World Wide Web! The URL is:

http://tierlab.ilstu.edu/MWERA-98

This WWW site provides the latest planning, news and information about the conference. Special pages feature additional information about the invited speakers. Conference registration and hotel reservation details are also on the site, along with links to the many highlights the City of Chicago has to offer. Detailed conference scheduling, along with the full text abstracts of accepted presentations and a searchable database of other program information, is also available to help attendees plan their time at the conference and in the "Windy City"!

For more information about MWERA-98 visit the web site, or contact:

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The Mid-Western Educational Research Association (MWERA) is a non-profit organization of professional educational researchers primarily from states and provinces located in the mid-western region of the United States and Canada. Membership is open to teachers, administrators, graduate students, and educational researchers from any school, college, or university; from business or industry; or from governmental or private agencies and organizations. Annual dues include a subscription to the *Mid-Western Educational Researcher*, the official peer-reviewed journal of the association, and a reduced registration fee for the annual conference. For information about becoming a member of MWERA, please contact:

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Conversations with Project Directors

Reading Recovery

Gay Su Pinnell, Carol Lyons and Diane DeFord
The Ohio State University

interviewed by

Emily Rodgers
The Ohio State University

Reading Recovery is an early, short-term intervention literacy program. It helps the lowest achieving first grade children develop effective and efficient problem solving processes and strategies used by successful children in the classroom. The goal of the program is to bring those children who are having most difficulty developing literacy skills to a level of achievement at or beyond their peers. This way, they can participate in and benefit from regular classroom literacy instruction.

Q. Would you describe the implementation of the Reading Recovery program in the United States?

A: Marie Clay initiated the Reading Recovery program in New Zealand in the 1970s as a result of her research into the early reading behaviors of young children. The program was adopted nationwide in New Zealand in the early 1980s. In 1983 Gay Su Pinnell wrote a proposal to implement Reading Recovery in six central Ohio public school districts. As a result of the positive outcomes at the end of that pilot year in 1984-1985, the state legislature agreed to fund Reading Recovery as a state-wide program in 1985-1986. That same year, The Ohio State University mounted a program to train Reading Recovery teacher leaders. There were 28 people in the first training program.

Diane DeFord

Q: How has the program grown in the U.S. since its pilot year in 1984?

A: It's staggering how it has expanded. In 1984 -1985, the program's pilot year, just one school district in Ohio and 16 teachers were involved. That first year, 110 children were served by Reading Recovery. By comparison, 99, 617 children were served by the program in the United States in 1995 - 1996, nearly 100,000 more than the implementation year. Over the last 14 years, 2939 school districts involving 9062 schools and 14,153 teachers have participated in the Reading Recovery program.

Q: The name "Reading Recovery" begs the question: What are children recovering from?

A: There are many ways the term "recovery" can be used. The U.S. tends to think of a medical terminology before other possible uses—recovery from a disease, for example. However, in New Zealand where the program originated, "recovery" is a nautical term. It means to "right one's course" and is not to be associated with the medical uses.

Q: How have you gone about securing funding for the program?

A: Initially, for the pilot year, funding was secured through a combination of grants from several foundations. Following the pilot year, we received a grant from the Ohio Department of Education to provide further training and a research grant from the MacArthur Foundation. Ongoing funding is definitely a concern because the scope of our work and responsibility have continued to expand but the funds have declined.

Q: How is Reading Recovery different from traditional remedial reading programs where students are pulled out from their regular classrooms for extra help with reading?

A: It is both similar and different. It is a "pull-out" program in that a teacher must work one-to-one with a child, and a quiet place insures the child's ability to attend carefully in every lesson. However, it is an early intervention

1261

program, not a remedial program. In this sense, Marie Clay, the program's developer, wanted a program that would intervene early while the least difference between the child's current abilities and the average performing child might be made up in a short program. Most children are in Reading Recovery from 12-15 weeks, although 20 weeks is an outside limit. This insures that the child will rapidly achieve accelerative learning, and lessen the need for further remedial services. If, however, after an intense program of this nature it is deemed that the child would benefit from a longer service program such as special education or more typical remedial services, the child may be referred to that program.

Gay Su Pinnell

***Q*: What are the theoretical underpinnings of Reading Recovery instruction. Where does it fit in the body of current research on early reading and writing?**

***A*:** The fundamental underpinnings of Reading Recovery include 35 years of research in language learning which have illustrated the theory of learning as a constructive process. The early language research demonstrated that children use language to communicate meaning. Marie Clay's early research demonstrated that young children construct meaning as they read. Bruner's theory of serial order, Luria's theory of the complex brain functioning in speech and writing processes, theories of perceptual and cognitive processing and theories about phonology have all contributed to Clay's theory of text reading. Clay's theory of literacy acquisition incorporates theories of other scholars (e.g. Bruner, Luria, Elkonin, Goswami, Bryant, Smith) and stresses that during acquisition of literacy, the child must learn what to attend to in the text and how to access that information. She calls these processes "divided attention".

The current research on early reading is changing, so one of the challenges is to keep up with and incorporate current research into the program. Differences in editions of Clay's published material reflect the theoretical changes that have occurred over time. These theoretical changes are also evident in the refinement of the Reading Recovery procedures. The changes are not haphazard but the result of careful evaluation over time. The changes in Reading Recovery practice are gradually assimilated through ongoing professional development of teacher leaders and Reading Recovery teachers.

***Q*: As program directors of Reading Recovery, you have conducted a considerable amount of research into the effectiveness of the program. What have been your major findings?**

***A*:** Reading Recovery has been proven an effective program for first grade children. In tests against other one-on-one tutorials, Reading Recovery was significantly better (Pinnell, Lyons, DeFord, Bryk, & Seltzer, 1994). In 1995-1996, we were successfully able to bring 57% of *all* children who received Reading Recovery lesson, to within the average of their class. This reference includes every child who received a Reading Recovery lesson in the United States during that school year, even if the child received just one lesson. Few programs have this stringent a requirement, not this type of success.

Carol Lyons

***Q*: Since 1984, over 200,000 first graders in North America who received a Reading Recovery program reached the average reading levels of their peers in about 16-20 weeks. How do you account for this accelerated progress?**

***A*:** There are several factors, but the highly skilled decision-making of teachers is the major influencing factor. The teachers report that ongoing professional development keeps them apprised of most recent developments, and makes skillful teaching a continuous pursuit. In addition, there are issues of

implementation that can facilitate this program. For example, a site needs an adequate number of teachers serving the proportion of children in greatest need. This may vary by site, but usually 10-15% is a initial goal of most schools. If a school's level of need is 20% and their level of service is only 5%, the effectiveness of the program may suffer.

***Q*: Since Reading Recovery instruction has been demonstrated to be so effective, why is it limited to first graders? What about older students who are having difficulty with reading?**

***A*:** Reading Recovery is limited to first graders because that is when children are most likely to catch up to their peers. You have to put efficiency and economy in a *prevention* mode, not a *remediation* mode.

Can it work with older students? Yes, but it would take longer than 12 - 20 weeks of individual instruction. If you took a Reading Recovery teacher's understanding of the reading and writing process and their understanding of developing self-regulatory behaviors and what that means, certainly Reading Recovery would work. You would get improvement in older students' ability to read. We have two dissertations that did this with adults. It's not Reading Recovery anymore, though. It's taking the knowledge and some of the procedures as well as the rationales behind those procedures and applying them to a different population.

***Q*: In a recently published document, *Learning Disabilities —A Barrier to Literacy Instruction* (1995), the International Reading Association identified Reading Recovery as a program that reduces the number of students who are labeled learning disabled. Is there evidence that Reading Recovery can reduce the learning disabled population? If so, how do you account for this effect?**

***A*:** There is research that shows that it is doing that (see Lyons, in press). But there are problems collecting LD data. It's not as readily available because school districts often do not release retention and LD referral data to the public.

Can Reading Recovery reduce the learning disabled population? Yes, because in our view the children were mislabeled in the first place. They never had a learning disability, they were instructionally disabled. For example, if the instructional approach is to focus on learning letter sounds and words in isolation then children who are most at risk and who are vulnerable to instruction will rely on these unproductive reading strategies.

In 1986-1987, 110 children were served by the Reading Recovery teacher-training class in Ohio. One third of these 110 children had been labeled "learning disabled". Yet 83% of them successfully completed the program and were reading at or near the average reading levels of their peers.

***Q*: What do we know now, 13 years after the program was first implemented about the long term effects of Reading Recovery? Do Reading Recovery students maintain their gains in reading after first grade?**

***A*:** In early 1998 an annotated bibliography of follow-up studies on Reading Recovery students will be available. The Ohio follow-up study has control groups (see Reading Recovery in Ohio, 1997). Three others that come to mind, are in Massachusetts (see Reading Recovery in Massachusetts, 1995-1996); Texas (see Reading Recovery in Texas, 1988-1996), and New York (see Jaggar, Smith-Burke, Ashdown, & Simic, 1996). Each of them used their state assessments to see how Reading Recovery children, who were discontinued, do. They've maintained their gains.

***Q*: Wilson and Daviss, authors of *Redesigning Education*, have stated that "Reading Recovery is the best evidence yet of the direct link between good design and educational excellence" (see Wilson & Daviss, 1994, p.76). Would you comment on the design of the program and how this is linked to the effectiveness of Reading Recovery.**

***A*:** Because Reading Recovery invests in teachers' professional development (intense training, continuous professional development) and maintains a extensive research base, it is able to make each implementation an effective one. No teacher is alone in this program. The networks within a given district, through the teacher leader in the district, the state department in each state, to the training institution, makes this program unique.

***Q*: Michael Fullan has described the challenges in bringing about long-lasting change in education. Have you faced such challenges with implementing Reading Recovery? How have you dealt with them?**

***A*:** Every year, there have been challenges related to change. At first, the challenges were local and were related to administrative competition, program competition, etc. We dealt with them by forming relationships and bridges with individuals. We've found that the most powerful way to achieve collaboration is to establish a personal relationship with individuals and to focus on what we can do together. That becomes more and more difficult as the project gets larger.

There have been challenges at every level and in each period of growth. Challenges such as transporting children for the "behind the glass" session shook everyone up in the beginning. We no longer get calls about that factor. Also, the long term training was just seen as unnecessary. Now, everyone wants year long training. Other challenges have surfaced. Right now, Reading Recovery is caught up in the discussion over phonics vs. whole language. The issues are muddied because special programs like Reading Recovery are being confused with classroom approaches that include all children. We can not design classroom approaches based solely on what we have learned from special education. Reading Recovery fits into that. We simply wouldn't want all children to have Reading Recovery or anything like it.

Other challenges come from the creation of bureaucracy, even within Reading Recovery, as it grows larger. We are always trying to balance individual agendas and ambitions with the good of the whole.

Education, and therefore any act of teaching, must be accountable. So one of the challenges is to keep this system accountable at every level, to make necessary improvements, and to meet the needs of children in very diverse settings. Consequently, while there is a model of implementation and national guidelines that all teachers, teacher leaders, and trainers must use, there also must be a way to flexibly relate to each new site, each new teacher, and each new student to keep evolving to meet new demands. Other challenges are to keep the public we serve informed, to conduct research to address important questions related to program success, and to keep educational systems working together.

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Mid-Western Educational Researcher

Call for Feature Writers

The *Mid-Western Educational Researcher* is a scholarly journal that publishes research-based articles addressing a full range of educational issues. The journal also publishes literature reviews, theoretical and methodological discussions that make an original contribution to the research literature, and feature columns. There are four issues of the journal published annually.

The journal is now seeking writers interested in contributing to three of its feature columns.

1) The **Conversations** column involves an in-depth, focused interview with a prominent person. Columns are generally up to 3000 words in length and must be accompanied by a photograph of the person interviewed.

2) The **Book Review** column focuses on a notable book, either a new publication or a "classic." Columns are generally up to 2500 words in length.

3) **Voices in Education** is a column which assembles pithy quotes or opinions from prominent persons or representative groups of individuals. The column addresses a range of topics with wide appeal to the education community and readership. Use of telephone or e-mail to assemble quotes or opinions is recommended for accuracy. Columns are up to 2000 words in length and assume a casual format.

The editors of the journal make final decisions on the acceptance and publication of feature columns. Questions regarding the journal or the submission of feature columns should be directed to the editors.

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Research Alive

Nontraditional Students in Higher Education: Meeting Their Needs as Learners

Mary K. Bendixen-Noe
The Ohio State University, Newark
Carmen Giebelhaus
Ohio Department of Education

Abstract

The research literature indicates nontraditional students in higher education are different from their traditional counterparts. Understanding our university clientele is important in being able to meet their needs. Instructors are encouraged to analyze their teaching strategies and to incorporate those which can further aid older students in their educational pursuits.

Terms the general public may use to describe a college student could include career directed, young, eager, rebellious, inquisitive, partier, and idealistic. While these descriptors may be somewhat accurate, the majority of the words are intended to describe only a portion of the college population—the stereotypical traditional-aged college student. Movies and television shows further depict college students in a very customary light according to age. Often, the college experience is seen as the last time to fully enjoy life without everyday realities coming into play. Increasingly, this picture is not the reality for a large number of college students. . . the nontraditional-aged persons attending institutions of higher education.

Nontraditional students are defined as those individuals who are age twenty-five and older and are either working on a bachelor's degree or post-baccalaureate non-degree program (Bishop-Clark & Lynch, 1992; Beder & Darkenwald, 1982; Breese & O'Toole, 1994). They are often referred to as older students, returning students, or adult students. The number of nontraditional students in colleges and universities has reached forty-five percent of all undergraduate students enrolled in higher education institutions. This is an increase of seven percent over the past decade (Rose, 1994; U.S. Department of Education, 1994). It is estimated that by the year 2000, over twenty million older students will be enrolled (Grottkau & Davis, 1987; Haviland & Mahaffy, 1985).

The nontraditional student population is a significant group in undergraduate programs in terms of both numbers and percentage of enrollment. As these numbers continue to increase, undergraduate institutions must look at the uniqueness of the adult learner and attempt to meet their needs. The purpose of this paper is to review the research conducted on nontraditional students in an attempt to help individuals better understand and work with this large sector of the higher education population in the classroom.

Historical Background

Prior to 1940, adults sought out program alternatives such as evening classes, special "adults only" offerings, off-campus programs, and correspondence study (Kasworm, 1980). Colleges and universities during this time focused on the traditional 16-24 year old student. Two events in the past 50 years have changed the look of college campus populations. First, in the mid-1940's a shift toward nontraditional students in daytime undergraduate education began with the enactment of the "GI Bill". Thousands of veterans entered daytime collegiate programs accounting for a total of 27.6% of the entire undergraduate enrollment in the 1945-46 academic year (Kasworm, 1980). A second significant event in undergraduate programs occurred from 1960-72. It was the emergence of "re-entry women". A "three fold gain" of nontraditional enrollment was registered during that time period by women students who were 25 to 34 years of age. Further the Women's Bureau of the U.S. Department of Labor (1974) estimated this gain was probably exceeded by women over 35.

This growth in nontraditional student population has continued in recent years. Contributing factors relate to changing career and leisure expectations, advances in technology and business operations, changing roles of men and women in society, and the rise in consciousness regarding life quality (Hall & Miller, 1989; Iovacchini, Hall & Hengstler, 1985).

Profile of the Nontraditional Student

Adult students are a highly diverse group that don't easily fit into a neat demographic, homogeneous profile. Yet, several studies have attempted to further define characteristics of the nontraditional student.

Sewall (1986) surveyed 1007 degree seeking adults to determine a profile of who these nontraditional students are. Results showed that nearly three-quarters of the respondents were between 25 and 34 years of age. After age 35, women were more likely to enroll than men by a ration of nearly three to one. Approximately two-thirds of the nontraditional-aged students were married. Seventy-four percent of the adults had children and 66% were employed—43% full time and 23% part time. In addition, nearly two-thirds had previously attended a college or university before dropping out or not completing their degree for some reason.

Differing results pertaining to age proportions were found by Charmer (1980) and Cross (1980), who revealed that one-half to three-quarters of the adult participants in undergraduate higher education were over 35 years of age. Cross (1981) also found socioeconomic differences between the older and traditional-aged students. Degree seeking adults typically come from working class backgrounds and, for the most part, are first generation college students. Parents of the traditional college students have tended to be better educated than parents of nontraditional students.

The major reasons cited for college entry by the older students ranged from developing a new career, wanting to learn, and having the satisfaction of obtaining a degree. Although reasons varied, job and family circumstances accounted for the majority of reasons cited for returning to school (Sewall, 1986; Hu, 1985; Osborne, Cope & Johnstone, 1994).

Typically the older student attends college on a part time basis. However, many institutions are reporting more full time adult students in their programs (Grace & Fife, 1987).

Solomon and Gordon (1981), and Bers and Smith (1987), found the desire to live at home, the specialized programs offered at the institution, low tuition, and the availability of financial aid were the components considered important by nontraditional students in selecting a college. Traditional students tended to indicate that the academic reputation of the college was important in their selection.

A significant portion of adult students must cope with dual responsibilities of job and family in addition to attending school. These factors play an important role in the older student's decision to delay entry to higher education and frequently trigger their return. Gustafson and Sorgaman (1983) and Osborne, Cope and Johnstone (1994) found that older students report being more concerned about flexible class scheduling, child care problems, and the need for credit for experiential learning than traditional students. In addition, nontraditional students were found to have many of the same problems reported by their younger counterparts: high concern in having too little time for course work and lack of information regarding career paths. Due to all these factors, it is not surprising that older students report difficulty in integrating into student life (Bradley & Cleveland, 1992; Vanderpool & Brown, 1994).

As more women enroll in higher education, new problems have been encountered. Gerson (1985) found that nontraditional women experienced greater role gratification but also encountered greater strain in their multiple roles. Robertson (1991) reported that women and men often take different routes when entering and completing their programs in postsecondary education. Women are more likely to have more interruptions in their academic career that are attributed to more diverse role demands and greater relationship responsiveness by women (Hatch, 1990; McBride, 1990). However, Breese and O'Toole (1994) report that women also seek out higher education as a coping mechanism to deal with a role transition in their own lives. Examples of these role transitions include: divorce, death, children leaving home, and/or the youngest child starting school. Perhaps not surprising is that nontraditional females reported a significantly higher degree of dissatisfaction with institutional climate, especially during their first year (Gustafson & Sorgaman, 1983; Wilkie & Thompson, 1993).

Several researchers (Fujita-Starck, 1996; Morstain & Smart, 1974) caution instructors to not heavily rely on adult student demographics as their means to understand this learner. Instead, they urge us to analyze the nontraditional's motivation for attending higher education institutions. Without this information, they say, erroneous generalizations may be made.

The Nontraditional Student in the Classroom

Historically, American colleges and universities focused curriculum programs and institutional mission on the younger adult, 16-25 years of age. Older adult needs were to be met by continuing education programs. These programs attempted to link together, the adult, the community and the university (Kasworm, 1980).

Higher education for adults is based on the following beliefs:

1. Adults are capable, motivated learners.
2. Off-main-campus and nontraditional classroom settings can provide effective learning experiences.
3. University resources can be relevant to adult and community needs.
4. Teaching-learning strategies which recognize the unique characteristics of adults are required. These strategies incorporate variable access and time frame flexibility.
5. Adult students are necessary and important to colleges and the public. (Knowles, 1980).

Not all educators agree with these statements, as common misunderstandings are associated with nontraditional students. Kasworm (1980) noted some university faculty suspected that older students were not as qualified for undergraduate education due to age, time lapse from learning activities, or declining intellectual abilities. These suspicions are not supported by research. In fact, research contradicts these beliefs.

The reality is that adult students in higher education study more hours per week than do traditional students (Iovacchini, Hall & Hengstler, 1985). This is evidenced when grade point averages of younger and older students in the same undergraduate degree programs were compared (Halftner, 1962). GPA's of older students were significantly higher than the young students in total performance. These findings were corroborated by Ryan (1972) and Darkenwald and Novak (1997), who also found a positive relationship between age and levels of achievement.

Miller (1989) and Nordstrom (1989) reported that nontraditional students are more internally motivated to learn, prefer informal learning, and are more goal-directed than traditional students. Older students appear to have "a motivation, an excitement, and a love of learning" (Bishop-Clark & Lynch, 1992, p. 114). This may explain why nontraditional students are more prompt and regular in class atten-

dance (Glass & Rose, 1987) and why they perceive the classroom environment more favorably than traditional students (Stage & McCaffery, 1992).

Faculty who work with older students perceive them as more motivated, pragmatic, self-directed, goal oriented, and competent than traditional students (Beder & Darkenwald, 1982; Bodensteiner, 1985; Pew Charitable Trust, 1990; Raven & Jimmerson, 1992). Jacobs (1989) reported that nontraditional students were viewed as her "best students" as "they responded, reacted, opined, and participated in the process of education" (p. 329). However, not everyone views them as a positive force in the classroom, as some students on a college campus referred to adult students as "DAR's—Damned Average Raisers" (Jacobs, 1989, p. 331). Interestingly, while some studies show that faculty members perceive differences between nontraditional and traditional students (Sisco, 1981; Swift & Heinrichs, 1987; Pew Charitable Trust, 1990; Raven & Jimmerson, 1992), other studies indicate faculty often feel there is no need to teach older students differently from younger students and do not alter their methods of teaching (Galerstein & Chandler, 1982; Conti, 1985; Gorham, 1985). This implies that although instructors find the nontraditional group better students, they often do not change their teaching to a style which may benefit adults' learning.

The opinion that teaching adult students is different from teaching children is based on a principle called andragogy (Knowles, 1980). Andragogy was a word created by European educators, who saw the need for a model for adult learners that was distinctive from pedagogy. Pedagogy refers to the art and science of teaching children, while andragogy refers to the art and science of teaching adults. Assumptions regarding adult that are central to the andragogy model include that:

1. Learners' self-concept moves from being a dependent personality toward being a self-directed human being.
2. Learners' accumulate a growing reservoir of experience that becomes an increasingly rich source of learning.
3. Learners' readiness to learn becomes oriented increasingly to the developmental tasks for their social roles.
4. Learners' time perspective changes from one of personal application of knowledge to immediacy of application, and accordingly, their orientation toward learning shifts from one of subject centeredness to one of performance centeredness.
5. Learners' are motivated to learn by internal factors rather than external ones (Knowles, 1985).

Andragogy suggests a teachers' role which is more responsive and less directive. The model encourages self-directed learning at high levels. The adult student should have input regarding content, methodology, learning assessment techniques, etc. (Gorham, 1982). Further, Beder and Darkenwald (1982) cited eight differences in teaching adults as opposed to teaching their younger counterparts. They include: a) greater use of group discussion; b) less time spent on classroom discipline; c) more variety of teaching technique; d) less time spent on giving directions; e) more relating of material to life experiences; f) more flexible instructional activities; g) more adjustments made in instructional content in response to student feedback; and h) less emotional support provided to individual students.

Additional research on nontraditional students in colleges and universities appears to support many of the andragogical principles. Several researchers (Kasworm, 1980; Backus, 1984; Birkey, 1984) found that older students indicated stronger preferences for dealing with theoretical problems and concerns and greater capacity for critical thinking during problem solving. They are more likely to initiate interaction with the college instructor (Gorham, 1985; Bishop-Clark & Lynch, 1992) and less likely to blindly accept information without challenge (Richter-Antion, 1986). Loesche and Foley (1988) reported that nontraditional students prefer to organize their own learning experiences, while younger students indicated a preference for more teacher directed experiences. Adult students identified characteristics of effective instructors who use student centered experiences. These include: a) relevance of material, b) encouraging participation, c) being open to questions, and d) showing concern for student learning (Donaldson, Flannery, & Ross-Gordon, 1993). Older students also prefer realistic, tangible learning situations (Holtzclaws, 1980), hands-on practical examples and discussion (Bishop-Clark & Lynch, 1992) and problem-based learning (Fiddler & Knoll, 1995).

In a 1994 study, Richardson that found adult students use what he calls a "deep approach or a meaning orientation" (p. 318) towards coursework. This is in contrast to the traditional student who employs a "surface approach or a reproducing orientation". Richardson (1994) explains this phenomena by pointing out that nontraditional students are more motivated by intrinsic goals. Their prior life experiences help promote the "deep approach" towards course work. In contrast, the younger students develop a "surface approach" to learning while in high school and evidently carry this trait forward in higher education.

Conclusions

As can be seen, there are numerous differences between traditional and nontraditional students. Further while nontraditional students show similar problems to traditional students regarding lack of time for course work, older students apparently experience more role diffusion and time constraints due to family and job situations.

Those who work with both traditional and nontraditional students may want to examine what is currently being done to accommodate the needs of both age groups. Changes may need to be made to ensure that all individual needs are being met. Many articles written on nontraditional students focus on changes involving support services (e.g. Brenden, 1986; Scholssberg, Lynch & Chickering, 1991; Bova & Phillips, 1984; Rawlins & Lenihan, 1982; Villella & Hu, 1991, Vanderpool & Brown, 1994). While these components may be necessary in accommodating adult learners, little attention has been given to modifying how course content is delivered. Instructors of older students need to contemplate the theories of adult learning and incorporate these

elements in their classrooms. They should include more group discussions and offer a variety of assignments from which students can choose. Additionally, research needs to be undertaken to further investigate strategies that will aid in the knowledge development of nontraditional individuals in higher education.

This does not imply that the needs of the traditional-aged individual be forgotten. Flexibility seems to be a recurrent theme in trying to achieve maximum learning for all students in higher education. Perhaps analyzing the four teaching strategies that have been identified by Bishop-Clark and Lynch (1992) in creating a conducive learning environment for nontraditional and traditional students will aid us in this growth. These were: developing more personal contact with students; allowing students to discuss differences between traditional and nontraditional students; becoming equitable in how each group is approached; and increasing awareness of student similarities regardless of age.

As older students continue to enter the "ivory tower", we, in higher education, should commit ourselves to understanding and modifying existing conditions to better serve all students across all ages. The university is in part a business structure. As a business, we should be serving all our customers to the best of our ability.

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Changes in the Personal and Teaching Efficacy Levels of Teachers Exposed to the FOCUS Model

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Abstract

The purpose of this study was to evaluate the changes in the teacher efficacy levels of teachers exposed to an instructional model referred to as FOCUS. The analysis revealed that a majority of the participants had pre-treatment efficacy scores that corresponded to higher post-treatment efficacy scores, on at least one of the two efficacy scales, for the participants who were exposed to the FOCUS model. These finds, although they should only be considered preliminary due to the nature of the research design employed in this study, do suggest the need for further study of the FOCUS model's impact on teacher efficacy.

Introduction

In some of the earliest work on teacher efficacy, the Rand Corporation researchers defined teacher efficacy as "the extent to which the teacher believes he or she has the capacity to affect student performance" (McLaughlin & March, 1978, p. 84). Considerable researcher effort has been given to the appropriate conceptualization and measurement of this teacher efficacy construct. As noted by Ross (1994) "the majority of teacher efficacy researchers derive their conceptions from Bandura's (1977) theory of self-efficacy (p. 3). Bandura suggests that self-efficacy consists of two components: Outcome expectations and efficacy expectations. The outcome expectations are an individual's belief that certain behaviors will produce particular outcomes. On the other hand, the efficacy expectations are an individual's belief about his or her own ability to bring about an expected outcome.

Ashton and Webb (1982, 1986) extended Bandura's theoretical framework of self-efficacy to teachers. They suggested that one of the two components of a teacher's sense of efficacy is a belief that certain actions undertaken by teachers in general will lead to student learning. This type of efficacy, which Ashton and Webb (1982) and Webb (1982) referred to as teaching efficacy, is close to Bandura's outcome expectations. The second dimension of a teacher's sense of efficacy, as discussed by Ashton and Webb (1982), is a teacher's belief that he or she will be able to bring about student learning. This dimension, which Ashton and Webb labeled personal teaching efficacy, relates to Bandura's efficacy expectations.

Gibson and Dembo (1984) developed an instrument that would measure the two dimensions of a teacher's sense of efficacy that were discussed by Ashton and Webb (1982). Their work resulted in an instrument that contained 16 statements. The instrument could be self administered with the respondents reacting to each statement by using a 6-point Likert scale. Gibson and Dembo stated that one set of nine statements that reflect the teacher's sense of personal responsibility in student learning corresponds to Bandura's efficacy expectations. The other seven statements measure a teacher's view concerning the limitations that teachers in general encounter in their abilities to influence the education levels of students because of external factors. These seven statements corresponded to Bandura's outcome expectations.

A number of other instruments have been designed by researchers to measure a teacher's sense of efficacy (Armor, Conry-Oseguera, Cox, King, McDonnell, Pascal, Pauly, & Zellman, 1976; Berman, McLaughlin, Bass, Pauly, & Zellman, 1977; Rose & Medway, 1981; Guskey, 1988; Riggs & Enochs, 1990; Vitali, 1993). As noted by Benz, Bradley, Alderman, & Flowers (1992), the use of these various instruments has created a problem in interpreting the results of teacher-efficacy studies, at least insofar as drawing study-to-study conclusions.

In spite of this measurement problem, considerable and consistent evidence exists that teacher efficacy influences teacher and student outcomes (Ross, 1994). A number of studies have found relationships between efficacy levels of teachers and dimensions of current conceptions of good teaching practices. Riggs and Enochs (1990) and Guskey (1987) found that teachers with high levels of efficacy were more inclined to use activity-based methods and mastery learning, respectively. Guskey (1988) reported that teachers with higher levels of efficacy expressed more positive attitudes towards curriculum implementation. A study by Schriver (1993) indicated that teachers with higher efficacy levels were more knowledgeable of developmentally appropriate curricula. A study by Korevaar (1990) found that teachers with high personal teaching efficacy scores were more likely to confront student management problems.

1270

Other studies have reported positive relationships between teacher efficacy levels and student cognitive achievement and affective growth. Armor et al. (1976) reported that teachers' sense of efficacy was strongly and statistically significantly related to students' increases in reading achievement. Ashton and Webb (1986) reported that teaching efficacy and personal efficacy were significantly related to student mathematics and language achievement, respectively. Moore and Esselman (1992) and Ross and Cousins (1993) also found significant positive relationships between teacher efficacy and student achievement in mathematics.

A number of studies have reported significant positive relationships between a teacher's sense of efficacy and the students' affective development. Ashton and Webb (1986) and Roeser, Arbreton and Anderman (1993) found that teacher efficacy was positively related to student motivation. Miskel, McDonald and Bloom (1983) found a positive link between teacher efficacy and the students' increased self-esteem was discussed in a study conducted by Borton (1991).

Since relationships have been reported between the levels of efficacy expressed by teachers and their performances as educators and the academic performances of their students, an important issue to investigate is whether teachers' efficacy levels can be changed through educational programs. As noted by Ross (1994) in his review of 88 studies conducted on efficacy of teachers, "the results of attempts to change teacher efficacy have been mixed" (p. 17). Ross suggests that, as proposed by Vosniadou and Brewer (1987), in order to change efficacy levels of teachers, a radical restructuring in conceptions about students, teachers and learning may be required.

We also believe that these mixed results could be, at least in part, due to the lack of testing for the existence of an interaction effect between the participants' pre-treatment efficacy levels and the methods of instruction to which the participants were exposed. That is, the ability of a method of instruction to change a participant's efficacy level may be affected by that participant's pre-exposure efficacy level. Without the use of appropriate analytical techniques to investigate this interaction effect, the ability of the method to change the efficacy levels of participants may not be revealed through the data analysis.

The purpose of this field study was to determine whether the personal and teaching efficacy data of the participants exposed to the instructional model called FOCUS, which was developed by Russell (1992, 1994), indicate that the model may have an effect on the efficacy levels of participants. In addition, the analyses conducted in this study placed special emphasis on the interaction effects between the methods of instruction and the participants' two types of pre-treatment efficacy scores.

Research Method

A nonequivalent control group quasi-experimental design, as discussed by Campbell and Stanley (1963), was employed to assess the ability of the FOCUS model to impact the efficacy levels of participants. The paradigm for this design is as follows:

$$\begin{array}{c} O_{1,2}\ X_F\ O_{3,4} \\ \hline O_{1,2}\ X_C\ O_{3,4} \end{array}$$

where:

1. $O_{1,2}$ represents the pre-treatment personal efficacy and teaching efficacy measurements.
2. X_F represents the participants exposed to the FOCUS method of instruction.
3. X_C represents the participants not exposed to the FOCUS model, which constituted the Control Group.
4. $O_{3,4}$ represents the post-treatment personal efficacy and teaching efficacy measurements.

The 68 study participants, who were part of either the Control Group or the FOCUS Group, were teachers who were enrolled in graduate level classes offered by the Education Department of Ashland University during a summer term. Ashland University is located in north-central Ohio, which contains rural, suburban, and urban school systems. Twenty-nine of the 68 participants were not exposed to the FOCUS model during or prior to the summer term in which the study was conducted. These 29 participants, who taught in grade levels that ranged from kindergarten to the twelfth grade, served as the Control Group. The other 39 participants were exposed to the FOCUS model in a curriculum course during the same academic summer term. These 39 participants, who also taught in grade levels that ranged from kindergarten through the twelfth grade, constituted the treatment group. This treatment group was referred to as the FOCUS Group.

As noted by Campbell and Stanley (1963), "Design 10 [the nonequivalent control group design] should be recognized as well worth using in many instances in which Designs 4,5, and 6 [true experimental designs] are impossible" (p. 47). The manner in which the groups were formed and treated in this study, however, requires one to be aware of certain internal validity problems that may provide alternative explanations for any differences found between the post-treatment efficacy levels of the groups. These internal validity concerns include possible differences between the groups with respect to the following: (a) relevant characteristics of the participants including pre-treatment efficacy levels, age, years of experience, gender, and motivation, (b) the instructors to whom the groups were exposed during the summer term in which the study was conducted, and (c) the number and combination of graduate classes that the participants completed during the summer term.

With respect to relevant characteristics of the participants, various studies (Anderson, Greene and Loewen, 1988; Raudenbush, Rowan and Cheong, 1992; Beady and Hansell, 1981; and Chester, 1991) indicated that a participant's gender, number of years of experience, and age may effect participants' efficacy levels. A summary statistics of these

Table 1
Mean and Standard Deviation Values for Age, Yerars of Experience, Gender and Efficacy Scores

Variable	Groups	
	Control Group	FOCUS Group
Age[a]	35.4 (7.94)	42.3 (7.56)
Years of Experience[b]	10.5 (6.56)	14.2 (7.59)
Gender	.55[c]	.69[c]
Pretest Personal Efficacy Scores	39.31 (7.16)	38.9 (6.93)
Pretest Teaching[d] Efficacy Scores	23.24 (4.50)	24.71 (4.48)

[a]One educator in the FOCUS Group failed to indicate his or her age.

[b]Two educators in the Control Group failed to indicate their years of teaching experience.

[c]The gender value represents the proportion of female educators.

[d]The final scores for one teacher in the FOCUS Group were identified as outliers and, therefore, excluded from these figures.

variables for the participants in the Control and FOCUS Groups are contained in Table 1.

Although all of the participants in this study were teachers who were enrolled in graduate-level courses, the participants differed on various characteristics and experiences other than their exposure to or lack of exposure to the FOCUS model. Although the differences between the gender composition of the two groups and the mean pre-treatment personal and teaching efficacy scores were not statistically significant at the .05 level, the differences between the ages and years of experience of the participants in the two groups were statistically significant. The importance of these differences were somewhat ameliorated by the fact that subsequent regression analyses revealed that age, years of experience, and the two-way interaction effects between those variables and the group variable did not account for a statistically significant amount of unique variation in either of the post-treatment efficacy scores. These regression results, as well as the lack of statistically significant differences between the groups with respect to gender and the mean pre-treatment teaching and personal efficacy scores, increases the plausibility of the comparable-groups assumption. In spite of this fact, it is important to note that due to the lack of control over the other internal validity concerns, the findings presented in this study should be considered as preliminary.

The type of participant included in this study should be noted when evaluating its external validity. The 68 participants in this study were teachers who were enrolled as part-time students in graduate level classes offered by Ashland University, which is located in north-central Ohio. The grade levels taught by these participants ranged from kindergarten to twelfth grade.

Instruments

As previously mentioned, various instruments have been used to measure the level of a participant's sense of efficacy. In this study, the Teacher Efficacy Scale, which was devised by Gibson and Dembo (1984), was used. As indicated by the research paradigm, each educator who participated in this study completed the Teacher Efficacy Scale at the beginning and end of the summer academic term. This instrument required each participant to rate each of 16 statements on a 1 (strongly disagree) to 6 (strongly agree) scale. The ratings obtained from the first nine statements were summed to obtain a personal efficacy score for each participant. A high score on these nine statements was interpreted to mean that the participant had a high level of personal efficacy, and a low score would indicate that the participant had a low level of personal efficacy. The mean and standard deviation values for the pre-treatment personal efficacy scores for the participants in the Control and FOCUS groups are listed in Table 1.

The other seven statements were used to measure a participant's teaching efficacy score. The total score on these seven items for each participant was subtracted from 42. This procedure produced a teaching efficacy score that would be high for a participant who had a high level of teaching efficacy, and the score would be low for a participant who had a low level of teaching efficacy. The mean and standard deviation values for the pre-treatment teaching efficacy scores for the participants in the Control and FOCUS groups are also listed in Table 1.

Gibson and Dembo (1984) reported in their study that an analysis of internal consistency reliability values produced Cronbach's alpha coefficient values of .78 and .75 for the

1272

personal efficacy scores and teaching efficacy scores, respectively. An internal consistency analysis of the pre-treatment personal and teaching efficacy scores recorded for the participants in this study produced Cronbach alpha values of .88 and .56, respectively.

With respect to validity of the personal and teaching efficacy scales, Gibson and Dembo (1984) stated that a multitrait-multimethod analysis supported both convergent and discriminant validity of the instrument. Although an analysis of the efficacy instrument's validity was not conducted in this study, it should be noted that both the validity study conducted by Gibson and Dembo and this study involved teachers.

Control and FOCUS Groups

Teachers who were enrolled in graduate-level classes and who had never been exposed to classes that specifically employed the FOCUS model as the basis of instruction served as the Control Group. Teachers who were enrolled in two sections of a graduate-level curriculum course were exposed to the FOCUS model of instruction. This course was a survey course in curriculum development that encompassed the elementary, the middle, and the high school levels. These classes constituted the experimental group, which was identified as the FOCUS Group. The participants in the FOCUS Group were exposed to 36 hours of instruction during a summer term.

Participants in the FOCUS Group were exposed to a relaxed classroom environment where they were treated as valuable participants in the learning process. Each topic in the curriculum course was approached from a receiver-oriented perspective as suggested by Ausubel, Novak, and Hanesian (1978). Once the participants' levels of knowledge were determined, course topics were further explored by using activities and instructional strategies, which were designed to match the participants' various learning styles as described by Kolb (1984), McCarthy (1981), and Dunn, Dunn, and Price (1977). After a given topic was explored, the course facilitator demonstrated how the various instructional and/or classroom management practices could be used in the participants' classrooms. The participants were then asked to design their own plans from this information. In addition, they were also expected to write journal entries throughout the course. The facilitator collected the journals and gave feedback to the participants prior to the next session. This activity allowed the participants, as well as the course instructor, to track their progress throughout the course.

All of the activities experienced by the participants in the FOCUS Group were based on the systematic use of the FOCUS behavioral model (Russell, 1992, 1994). Thus, the participants were not only learning the model, they were also experiencing it. This exposure to the FOCUS model was designed to enhance each participant's sense of belonging and acceptance. Since the purpose of this article is to report on the analysis of the post-treatment efficacy scores of the participants rather than provide the readers of this article with a detailed description of the FOCUS model, we encourage them to refer to Russell (1992, 1994) for a more detailed description of the FOCUS model.

Hypotheses

Even though we believed that the exposure to the FOCUS model would increase the participant's levels of personal and teaching efficacy, we were not willing to assume that those increases would be constant across the pre-treatment levels of efficacy. That is, when compared to the Control Group, the gains in the personal and teaching efficacy scores for the participants in the FOCUS Group may not be consistent across the range of pre-treatment scores. Thus, it was essential to test for the existence of pre-treatment-efficacy-scores-by-group-interaction effects. The null hypotheses that were designed to test for these two-way interaction effects were as follows:

1Ho: The interaction effect between the pre-treatment personal teaching efficacy scores and group membership does not explain some of the variation in the post-treatment personal teaching efficacy scores.

2Ho: The interaction effect between the pre-treatment teaching efficacy scores and group membership does not explain some of the variation in the post-treatment teaching efficacy scores.

It should be noted that these two null hypotheses did not include the ages and the years of experience of the participants as variables as well as the two-way interaction effects between the groups and each of those variables. These variables were not included due to the fact that, in preliminary analyses, they accounted for less than 3% of unique variation in either of the post-treatment efficacy scores, which was not statistically significant. Thus, those variables were excluded from the two null hypotheses and the corresponding statistical analyses in order to increase the statistical power of the analyses and to simplify the interpretation of the results.

The two null hypotheses were statistically tested with regression models (McNeil, Newman & Kelly, 1996). The SPSS/PC+ subprogram REGRESSION (SPSS, 1990) was used to generate the regression analyses for these two models. The dependent variable for Model 1, which was used to statistically test $1H_0$, consisted of the participants' post-treatment personal efficacy scores. This model contained three independent variables. One of the independent variables included in Model 1 consisted of the participants' pre-treatment personal efficacy scores. This variable was labeled Pre- Treatment Personal Efficacy. The second independent variable, which was identified as the Group variables, consisted of the values of zero and one. A value of one indicated that the participant was in the FOCUS Group, and a

zero value meant that the participant was in the Control Group. The third variable included in Model 1 was formed by multiplying the Pre-Treatment Personal Efficacy Scores variable by the Group variable. The inclusion of this variable, which was labeled Pre-Treatment-Personal Efficacy X Group, enabled the difference between the slopes of the regression lines of the Control and FOCUS groups to be estimated.

The teaching efficacy scores served as the dependent variable in the regression model used to statistically test $2H_0$. Similar to Model 1, this model, which is referred to as Model 2, included three independent variables. One of these independent variables consisted of the participants' pre-treatment teaching efficacy scores. This variable was labeled Pre-Treatment Teaching Efficacy. A second independent variable was the same Group variable that was used in Model 1. The third independent variable was generated by multiplying the Pre-Treatment Teaching Efficacy variable by the Group variable. This variable, which was labeled Pre-Treatment Teaching Efficacy X Group, was used to estimate the difference between the slopes of the regression lines for the Control and FOCUS groups.

The *t* values of the regression coefficients for the Pre-Treatment Personal Efficacy X Group variable and the Pre-treatment Teaching Efficacy X Group variable were used to statistically test $1H_0$ and $2H_0$, respectively. If a null hypothesis was rejected, the Johnson-Neyman (1936) nonsignificance region between the two regression lines was calculated. It should be noted that Chou and Wang (1992) suggest that the Johnson-Neyman technique can be used to make simultaneous inferences provided that the assumption of homogeneity of regression slopes was rejected. The Johnson-Neyman nonsignificance regions were calculated by a program written by Fraas and Newman (1997), which was used in conjunction with SPSS/PC+ software.

Two analytical procedures used in conjunction with the analyses of the regression models should be noted. First, since this study involved the two dependent variables of personal efficacy and teaching efficacy, a Bonferroni corrected alpha level was used to maintain the experimentwise alph level at the .05 level. That is, the alpha level for each *t* test used to statistically test each interaction effect was set at .025, which is equal to .05 divided by 2. Second, before each null hypothesis was tested, the data utilized in each model were tested for possible outlier values with a test of Cook's distance measures (Neter, Wasserman and Kutner, 1985). As suggested by Neter et al., the magnitude of Cook's distance measure for each observation was declared an outlier if its corresponding *F* value exceeded the 50th percentile of the *F* distribution with numerator and denominator degrees of freedom of 4 and 64, respectively. Any value that appeared to distort the regression analysis was reviewed for possible elimination.

Results

The test results of Cook's distance measures obtained from Model 1 indicated that none of the participants was identified as having scores that could be considered as outlier values. Thus, the data for all 68 participants were included in an analysis of Model 1. The *t* test of regression coefficient for the Pre-Treatment Personal Efficacy X Group variable ($t = -2.44$, $p = .0175$) indicated that the difference between the slopes of the regression lines of the FOCUS and Control groups was statistically significant at the .025 level, that is, $1H_0$ was rejected (Table 2). Thus, the differences between the post-treatment personal efficacy scores of the FOCUS and Control groups were not constant across the range of pre-treatment personal efficacy scores.

Table 2
Regression Results for Model 1

	Model 1		
Variable[a]	Regression Coefficient	*t* Test Value	*p* Value
Pre-Treatment Personal X Group	-.538	-2.44	.018
Pre-Treatment Personal Efficacy Scores	.852	5.17	<.001
Group[b]	25.124	2.87	.006
Constant	6.362	.97	.338
$R^2 = .370$			
Adjusted $R^2 = .341$			
N = 68			

[a]The dependent variable consisted of the teachers' post-treatment personal efficacy scores.

[b]The values for the Group variable are zero and one for teachers in the Control and FOCUS groups, respectively.

This interaction effect between the Pre-Treatment Personal Scores variable and the Group variable, which is diagramed in Figure 1, was disordinal with the regression lines intersecting at 46.7. The regression line for the FOCUS Group was higher than the regression line for the Control Group below the pre-treatment personal efficacy score of 46.7. The regression line for the Control Group, however, was higher than the regression line for the FOCUS Group for pre-treatment personal efficacy scores higher than 46.7.

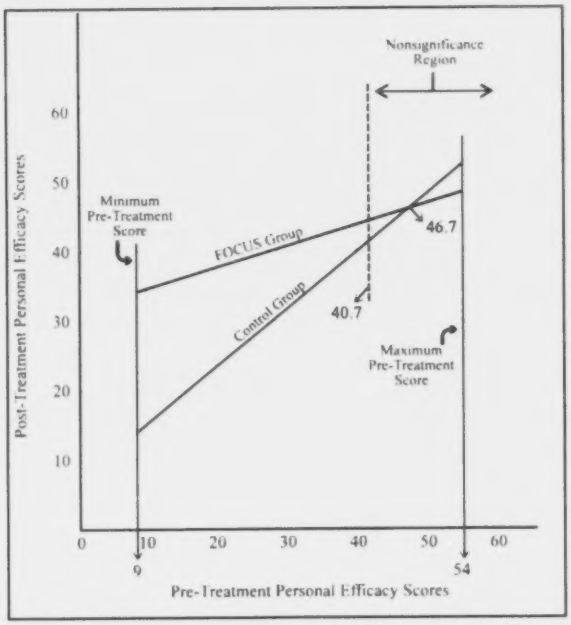

Figure 1. Pre-Treatment-Personal-Efficacy-Scores-By-Group Interaction

The Johnson-Neyman confidence limits were calculated to determine the nonsignificance region between the two regression lines. The upper limit for the 95% confidence limits was 81.8 points, which was above the maximum score of 54 for the personal efficacy section of the instrument. The lower limit was 40.7 points. Thus, the post-treatment personal efficacy scores of the participants in the FOCUS Group were statistically significantly higher than the corresponding scores of the participants in the Control Group when their pre-treatment personal efficacy scores were less than 40.7. The post-treatment personal efficacy scores for the participants in the Focus and Control groups were not statistically significantly different, however, when the regression line for the Control Group was higher than the regression line for the FOCUS Group. That is, the post-treatment personal efficacy scores were not statistically significantly different when the participants' pre-treatment personal efficacy scores were greater than 40.7.

The test results of Cook's distance measures obtained from Model 2 indicated that the data recorded for one participant had a distorting influence on the results obtained from the regression analysis. A review of this participant's teaching efficacy scores revealed that the scores changed from the minimum score on the pre-treatment measurement to the maximum score on the post-treatment measurement. Since this extreme change far exceed the change recorded for any other participant, this participant's data were eliminated from the data set used to statistically test $2H_0$. Thus, the data for 38 participants, rather than 39 participants, were included in the FOCUS Group when $2H_0$ was tested.

The t test of the coefficient for the re-Treatment-Teaching-Efficacy X Group variable ($t = 2.742$, $p = .008$) indicated that this interaction effect was statistically significant at the .025 level (see Table 3). As indicated by the two regression lines contained in Figure 2, the interaction effect between the pre-treatment teaching efficacy scores and the groups was disordinal. The pre-treatment score located at the intersection point of the two regression lines was 20.7. The regression line for the Control Group was higher than the regression line for the FOCUS Group below the pre-treatment teaching efficacy score of 20.7 points. The regression line for the FOCUS Group, however, was higher than the regression line for the Control Group for pre-treatment teaching efficacy scores greater than 20.7.

The lower limit of the 95% Johnson-Neyman confidence limits for the regression lines diagramed in Figure 2 was equal to 10.0. It should be noted that even though 10.0 points was above the minimum score of 7 points that a participant could receive on this section of the Teacher Efficacy Scale, none of the participants included in this study had a score below 13 points. Thus, none of the participants had a score below the lower limit of the nonsignificance region. The upper confidence limit was equal to 23.8. Thus, the post-treatment teaching efficacy scores of the participants in the FOCUS and Control groups were not statistically significantly different when their pre-treatment teaching efficacy scores were below 23.8 points, except for extremely low pre-treatment scores, which no one in the study group received. The post-treatment teaching efficacy scores of the participants in the FOCUS Group were statistically significantly higher than the corresponding scores of the participants in the Control Group, however, when their pre-treatment teaching efficacy scores were greater than 23.8.

To understand the implications of the nonsignificant regions as well as the significant regions for the two sets of regression lines, it is important to note that the location of the participants' pre-treatment efficacy scores along those regression lines. Twenty-one of the study's 67 (31%) participants who were included in both analyses had pre-treatment efficacy scores that corresponded to points on the regression lines where the post-treatment efficacy scores of the participants in the FOCUS Group were statistically significantly higher than the scores of the participants in the Control Group on both efficacy scales. Twenty-eight (42%) of the participants had pre-term efficacy scores that corresponded to points on the regression lines where the post-term efficacy scores of the participants in the FOCUS Group

Table 3
Regression Results for Model 2

	Model 2		
Variable[a]	Regression Coefficient	*t* Test Value	*p* Value
Pre-Treatment Personal X Group	.703	2.742	.008
Pre-Treatment Personal Efficacy Scores	.153	.790	.433
Group[b]	-14.569	-2.339	.023
Constant	19.800	4.331	<.001
R^2 = .347			
Adjusted R^2 = .316			
N = 67			

[a]The dependent variable consisted of the teachers' post-treatment teaching efficacy scores.

[b]The values for the Group variable are zero and one for teachers in the Control and FOCUS groups, respectively.

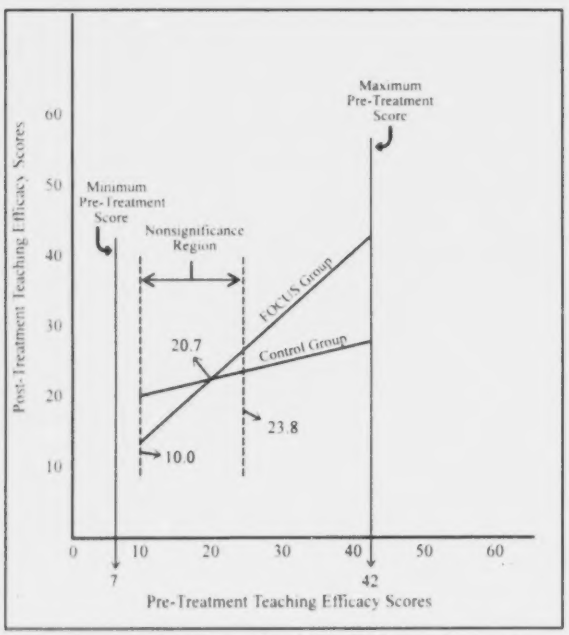

Figure 2. Pre-Treatment-Teaching-Efficacy-Scores-By-Group Interaction

were statistically significantly higher than the scores of the participants in the Control Group on one of the two efficacy scales. The remaining 18 (27%) participants had pre-treatment efficacy scores that corresponded to points on the regression lines where the post-treatment efficacy scores of the two groups were not statistically significantly different on either efficacy scale.

Thus, a total of 73% had pre-treatment efficacy scores that were located at points on the regression lines where the post-treatment efficacy scores of the participants in the FOCUS Group were statistically significantly higher than the post-treatment efficacy scores of the participants in the Control Group on at least one of the two efficacy scales. None of the participants had pre-treatment efficacy scores that were located at points on the regression lines where the post-treatment efficacy scores of the participants in the Control Group were statistically significantly higher than the post-treatment efficacy scores of the participants in the FOCUS Group on either of the two efficacy scales.

Discussion

The regression analysis of the participants' post-treatment efficacy scores indicated that disordinal pre-treatment-efficacy-by-group-interaction effects were present. The investigation of these interaction effects was a critical element in the understanding of the effect of the FOCUS model on the efficacy levels of the participants. An analysis of these disordinal interaction effects revealed that a majority of the participants (73%) had pre-treatment efficacy scores that corresponded to levels at which the post-treatment efficacy scores were statistically significantly higher for the FOCUS Group than the Control Group on at least one of the two efficacy measures. The remaining group of participants (27%) had pre-treatment efficacy scores that corresponded to points on the regression lines where the post-treatment efficacy scores of the two groups were not statistically significantly different on either of the efficacy scales.

Thus, teachers who appear to benefit from exposure to the FOCUS model are those participants with initial personal efficacy levels that are average and below average and those participants with initial teaching efficacy levels that are average or above average. The finding with respect to the personal efficacy levels is not unexpected in light of the purpose of using the FOCUS model and the findings

1276

reported by Bolinger (1988). Bolinger reported that the personal efficacy increased in a training program that provided participants with effective teaching skills. A goal of the FOCUS model is to have the participants, through experiences encountered in the class, become sensitized to the different learning styles of students and to learn various pedagogical methods that will increase the changes of maximizing those students' academic achievements. Thus, exposure to FOCUS may well increase a teacher's pedagogical knowledge and skill level. It can be argued that exposing the teachers to the FOCUS model may well have the greatest impact on those participants who had the lowest initial feelings of being able to affect the education of their students, that is, low personal efficacy levels.

Possible reasons why participants with average and above average initial levels of teaching efficacy recorded the gains in post-term teaching efficacy are not as clear. One possible explanation for that finding may lie in the connection between changes in the participants' personal efficacy levels and their changes in teaching efficacy levels. Investigation into such a connection may provide insight into why the participants with average and above average initial teaching efficacy levels recorded gains in post-treatment teaching efficacy levels when they were exposed to the FOCUS model.

Keeping in mind the internal validity limitations of this field study, which were previously discussed, a number of issues need to be addressed by future research on the FOCUS model and teacher efficacy if one is to have confidence that the FOCUS model does indeed have the positive effects suggested by the results of this study. First, it is important to determine if our findings can be replicated in studies which employ research designs that reduce the number of internal validity concerns contained in this study. Second, future studies need to determine if the type of changes in the personal efficacy and teaching efficacy levels of the participants exposed to the FOCUS model, such as the changes reported in this study, are sustained or only temporary. Third, future studies should determine if the changes in the efficacy levels of the participants exposed to the FOCUS model lead to changes in the academic performances of their students. Fourth, an investigation of the relationship between the changes in personal and teaching efficacy may provide important information regarding the interrelationship between such changes.

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(*continued from inside front cover*)

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MID-WESTERN EDUCATIONAL RESEARCHER

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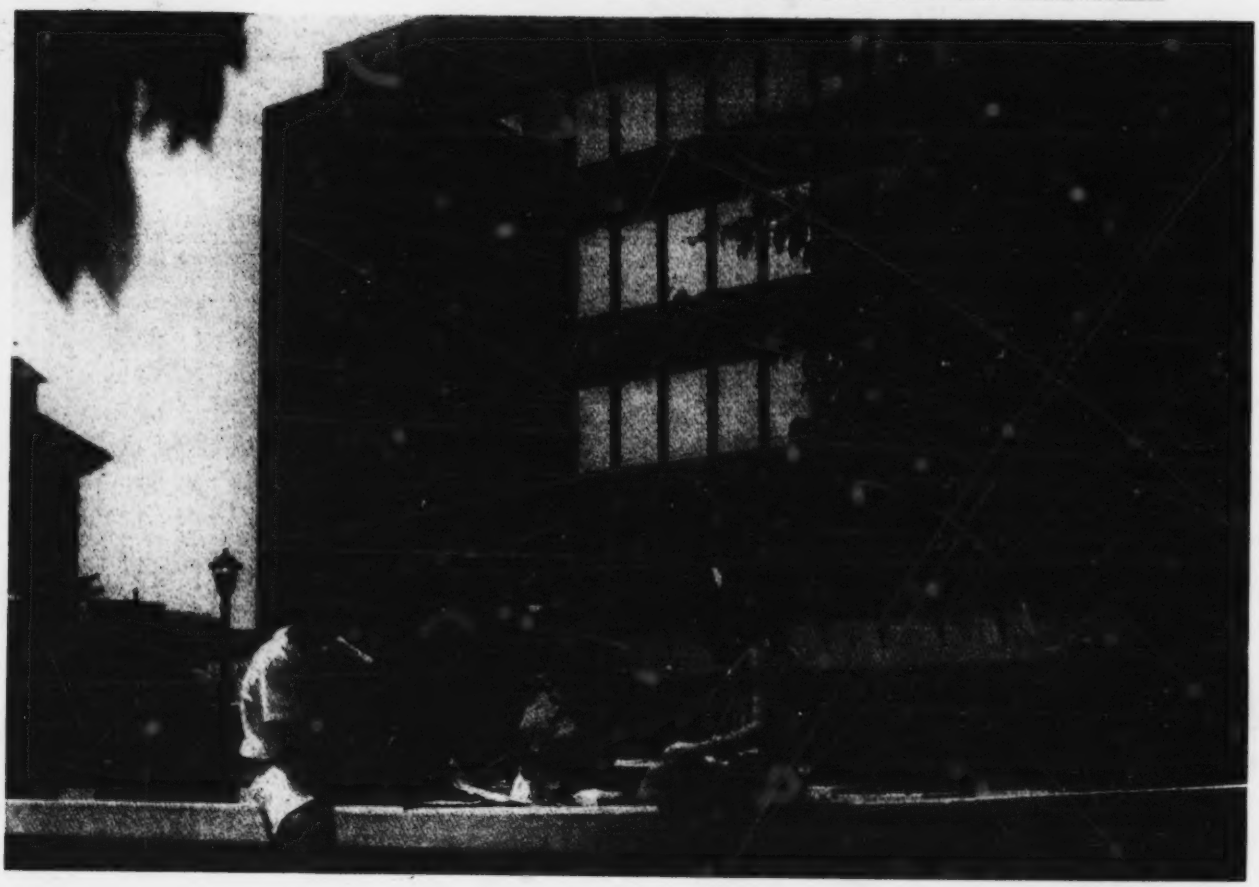

Illinois State University

Special Program Issue

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On the Cover

DeGarmo Hall, home of the College of Education at Illinois State University

Founded in 1857 with documents drafted by Abraham Lincoln, Illinois State University is one of the Midwest's oldest institutions of higher education and the first public university in the state. From its beginnings as a teachers college, Illinois State has served as a model for innovative teacher and administrator preparation, research and service.

Illinois State's College of Education, including the departments of Curriculum and Instruction, Special Education, and Educational Administration and Foundations, continues the tradition of preparing future educators. It is the largest preparer of teachers in Illinois, and among one of the largest in the nation. Many alumni hold positions of educational leadership, including college presidencies, agency administrative posts, and offices in professional associations. The Illinois Teacher of the Year was an Illinois State alumnae for two of the past three years.

Illinois State University is located in Normal, Illinois. It has an undergraduate and graduate enrollment of more than 20,000 students, with the College of Education's 130 faculty members teaching over 3,100 students each year. In the 1996-97 academic year the College of Education received over $2.4 million dollars in grants. Additional grants totaling over $900,000 have been received by the Illinois State's Center for Mathematics, Science and Technology (CeMAST), a campus-wide effort for research, teacher education, and curriculum development.

As we near the start of the 21st century, the College of Education is poised to offer new technologically-advanced programs. In partnership with key business and industry, Illinois State University is working hard to prepare educators for the next millennia.

Information for Contributors to the *Mid-Western Educational Researcher*

The *Mid-Western Educational Researcher* accepts research-based manuscripts which would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publications Manual of the American Psychological Association*, 4th ed., 1994 (available from the Order Department, American Psychological Association, P. O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8 ½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, and e-mail address (if available) should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

Manuscripts should be sent with a cover letter to:

Deborah L. Bainer, *MWER* Co-Editor
1680 University Drive, The Ohio State University at Mansfield, Mansfield, OH 44906

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Volume 11, No. 3 Summer 1998 ISSN 1056-3997

Welcome to MWERA—98! 2

General Information 3
- Conference Events and Highlights 4
- Professional Development Workshops 5
- Receptions and Socials 6
- Exhibits 6
- Program on the Internet 6
- Board of Directors, Association Council, Program Committee 7
- Proposal Reviewers 8

Conference Registration and Hotel Reservation 9
- Pre-Registration vs. On-Site Registration 9
- Hotel Facilities and Services 9
- Conference Registration Form 10
- Hotel Reservation Form 11
- Getting to the Conference 12

Chronological Listing of Sessions 13
- **Wednesday** 13
  - Kick-Off Address (Edward Hines, Illinois State University) 13
- **Thursday** 14
  - Keynote Address (Robert Albrecht, Western Governors University) 16
  - New Member Welcome 16
  - Cracker Barrel Social 21
- **Friday** 22
  - Business Meeting 23
  - Luncheon Address (Judith Gappa, Purdue University) 25
  - President's Reception 29
- **Saturday** 30
  - Presidential Address (Kim Metcalf, Indiana University) 31

References
- Cross-Index to Session Sponsors 34
- Subject Index 35
- Participant Index 37
- Address Directory of Participants 39
- Conference At-A-Glance 48
- Hotel Map Inside back cover

Call for Editors 46

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Welcome to MWERA-98!

Jeffrey B. Hecht
MWERA Vice-President
& 1998 Program Chair

On behalf of the Board of Directors, Officers, and the 1998 Program Committee I would like to welcome you to the 1998 Annual Meeting of the Mid-Western Educational Research Association. The program for this year, as in the past, is made up of papers which have undergone a rigorous peer-review process. Many volunteers have devoted countless hours in reading, evaluating, and commenting on this year's submissions. It is the dedication of our membership that allows MWERA to have a meeting with only the highest quality presentations!

This year I am pleased to welcome four nationally-recognized individuals who will share their critical insights in each day's invited addresses. Our meeting begins on Wednesday evening, October 14th, with Edward Hines, Distinguished Professor of Education from Illinois State University, delivering the Kick-Off Address. Hines, a nationally recognized expert on higher education finance, will share with us recent changes in the funding of higher education across the 50 states, where he expects the funding of higher education to go in the next decade, and what this could mean to faculty and universities. Robert Albrecht, Chief Academic Officer at the Western Governors University, will provide the Keynote Address on Thursday morning, October 15th. WGU is a ground-breaking new institution that is combining multi-state inter-university articulations, distance education technologies, and traditional instruction in a competency-based model for undergraduate education. Albrecht will talk about the programs being implemented by WGU, and the challenges facing both WGU and traditional institutions of higher education as well all move into the 21st century. The Thursday, October 16th Luncheon Address will feature Judith Gappa, Professor of Educational Administration at Purdue University, speaking about changes to the traditional academic career. Gappa is a noted expert in the forces molding the modern professoriate, and will share with us the most recent trends and data on full-time non-tenurable appointments, "stopping the clock" options, post-tenure review, and early retirement incentive plans. On Saturday October 17th we will welcome our own Kim Metcalf, Director of the Junior Achievement Center for Evaluation at Indiana University and the current President of MWERA. Metcalf has done considerable research on issues related to school choice, and will share with us the latest information on voucher programs drawn from his most recent work with the Cleveland Scholarship Program.

Member feedback has led to several changes for this year's meeting. More time has been allotted to papers within each session slot. Several workshops have been scheduled throughout the conference in addition to four pre-conference workshops scheduled on Wednesday afternoon. Roundtable discussions and tabletop poster sessions have been scheduled on both Thursday and Friday. In addition to the regular paper sessions, 12 additional tables have been planned for moderated discussions on selected "Hot Topics". Time has been allotted on Thursday for participants to eat a quick lunch without missing any sessions, with the catered Luncheon scheduled for Friday at noontime. Division meetings have also been scheduled throughout the conference to allow participants to more easily attend the division meetings of their choice. This year I am also pleased to welcome the participation of members of the Illinois Council of Professors of Educational Administration (ICPEA). The ICPEA is co-sponsoring, with Division A, two sessions on Thursday afternoon.

Overall, this year's meeting could be the best yet. I look forward to seeing everyone in Chicago in October!

General Information

The 1998 Annual Meeting of the Mid-Western Educational Research Association will be held from Wednesday, October 14th through Saturday, October 17th, at the Holiday Inn Mart Plaza in Chicago, Illinois. Registration and pre-conference workshops will begin early Wednesday afternoon, with the Kick-Off speaker starting the formal program at 8:00pm that evening. Thursday, Friday, and Saturday morning will consist of research papers presented in a variety of different formats, workshops, invited speakers, meetings, and social events. The conference will conclude following the final sessions at Noon on Saturday.

Meeting Registration is expected of everyone participating in or attending the 1998 annual meeting of the Mid-Western Educational Research Association. Registrants are provided a MWERA-98 **Name Tag**, which must be worn at all times while at the conference. Those planning to attend MWERA-98 are strongly encouraged to pre-register for the conference, workshops, and to make hotel reservations as soon as possible. Pre-registration and hotel reservations must be received by September 22, 1998. Registrations mailed after September 22nd may not be received in time for processing, and on-site payment in the form of cash or personal checks will be expected. If double-payment is later determined, a refund will be issued. On-site registration and packet pick-up will be available at the registration desk on the 14th Floor of the Holiday Inn Mart Plaza at the following times:

Wednesday, October 14, 11:00am - 5:00pm
Thursday, October 15, 8:00am - 5:00pm
Friday, October 16, 8:00am - 5:00pm

Membership in the Mid-Western Educational Research Association provides reduced conference registration fees and a subscription to the *Mid-Western Educational Researcher*, the official MWERA publication. Attendees are encouraged to join. Conference presenters must be paid members for 1998.

MWERA **Publications** are available through pre-registration. These include the *Directory of MWERA Members* for $8 and the *MWERA 1998 Program Abstracts* for $6. MWERA lapel pins are also available again this year for $3. These items may not be available at the conference unless ordered through pre-registration. If additional items are available they will offered for sale at the registration table by cash or checks only.

This year's **Exhibit Hall** will feature publishers and others providing materials and services to educators on Friday from 9:00am to 4:00pm. The Exhibit Hall will be located in the lobby of the 14th Floor of the Holiday Inn Mart Plaza. This year we will have a sharing table for you to bring job announcements, fill out mentor forms, and share other information which helps all of us.

Help **evaluate** the sessions and the annual meeting! We are requesting that all Session Chairs distribute evaluation forms to attendees at each session. In your registration packet you will also receive a form to evaluate the meeting as a whole. Please complete these forms and return them either directly to each Session Chair, or to the Registration Table on the 14th Floor lobby. Your comments are critical in improving our meetings.

Session Formats

Paper Presentation

Paper sessions allow presenters the opportunity to make short, relatively formal presentations in which they overview their papers to an audience. Three to five individual papers dealing with related topics are grouped into a single session lasting no longer than one hour and twenty minutes. The presenter(s) of each paper is(are) allowed 10 to 15 minutes to present the highlights of the paper. Some sessions will have a Session Discussant who will, following all papers, provide comments and a critical review. A Session Chair moderates the entire session. Presenters are expected to provide complete copies of their papers to all interested audience members.

Roundtable Discussion/Poster

Roundtable Discussion/Poster sessions provide opportunities for interested individuals to participate in a dialogue with other interested individuals and the presenter(s) of the paper. Presenters are provided a small table around which interested individuals can meet to discuss the paper. Presenters may elect to provide small, table-top poster-type displays, ancillary handouts, or other table-top A/V materials to augment their discussions. Interested individuals are free to move into and out of these discussions/posters as they wish. Presenters are expected to make available complete copies of the paper to all attendees. Multiple roundtable discussion/poster sessions are simultaneously scheduled in a common session slot lasting fifty minutes.

Symposium

A symposium provides an opportunity for examination of specific problems or topics from a variety of perspectives. Symposium organizers have identified the topic or issue along with individual speakers who will participate in the session. Participants may be provided with papers or other handouts relevant to, reflective of, or drawn from the symposium, and may be encouraged to participate in discussions and/or focused exercises as a part of the symposium's activities. Symposia are typically schedule for one hour and twenty minutes.

Workshop

Workshops provide an extended period of time during which the workshop leader(s) help participants develop or improve their ability to perform some process (e.g. how to provide clinical supervision, using the latest features of the Internet, or conduct an advanced statistical analysis). Workshops have been scheduled throughout the conference, allowing attendees the opportunity to attend several workshops of their choosing. Workshops are often scheduled for a longer period of time than other sessions, and may involve the payment of an additional fee and pre-registration.

Alternative Session

The form, topics, format and length of time of alternative format sessions are limited only by the imagination and creativity of the session organizer. The presenter(s) of alternative sessions have recruited the major participants or speakers, developed and provided necessary materials, and conduct or mediate the session as detailed in the program description.

Conference Events and Highlights

Edward Hines will open MWERA-98 at the Kick-Off Session on Wednesday evening at 8:00pm in the Sauganash Ballroom East. Hines, a nationally-recognized expert on finance in higher education and a Distinguished Professor of Education from Illinois State University, will present a talk entitled "Policy Research in Higher Education: Data, Decisions, & Dilemmas". A reception, sponsored by the Department of Educational Administration and Foundation at Illinois State University, will follow his talk.

Division Meetings have been scheduled conflict-free throughout the day on Thursday and Friday. Participation in a division is an important part of MWERA membership. Get to know the other folks in the division of your choice and become active in the happenings of that division, including helping to recruit new members and plan next year's conference.

Robert Albrecht, Chief Academic Officer of Western Governors University, will give the Keynote Address titled "Western Governors University: New Challenges, New Technologies, New University" on Thursday at 9:30am in the Sauganash Ballroom East. WGU is an innovative educational institution formed out of the cooperation of many states institutions of higher education, aimed at providing competency-based education through a combination of direct and distance education technologies. Albrecht will provide additional information, and be available for questions, in a Follow-Up session beginning at 10:30am in the Shakespeare Hotel.

New Members are encouraged to attend a new member welcome session Thursday starting at 10:30am in the American House. Come meet other MWERA members both new and old, and find out what this wonderful organization is all about.

The **MWERA Association Council** will hold its annual meeting over lunch on Thursday, beginning at Noon in the Sauganash Ballroom East. All Association Council members are expected to attend. New Council Members and Officers should also plan on attending a special orientation workshop scheduled for Wednesday afternoon from 3:10pm to 5:30pm, conducted by current Past-President Sharon McNeely.

Division E will host an Invited Address by **Othello Poulard** from the Center for Community Change on Thursday at 1:40pm in the Shakespeare Hotel. Poulard's talk, titled "A Strategic Program to Build Character and Self-Esteem Among Urban Adolescents", will describe a new initiative to improve the educational opportunities, and outcomes, of all adolescents in selected housing projects.

Two **Roundtable Discussion/Poster** sessions have been scheduled for MWERA-98, both running from 3:10pm to 4:00pm on Thursday and Friday in the Sauganash Ballroom East. Numerous interesting presentations on a variety of topics will take place during these times. In addition, several tables will be hosted by presenters prepared to lead participants in a guided discussion of today's *Hot Topics* in education! Organized by Tom Parish, MWERA's President-Elect, these hot topic tables add a new dimension to these two sessions!

The **Editorial Board** of the *Mid-Western Educational Researcher* will meet on Thursday afternoon at 4:10pm in the Mansion House. All members of the Editorial Board should attend.

The **Cracker Barrel Social** will be held from 5:30pm to 7:30pm in the Wolf Pre-Function Room on Thursday. This informal event offers a chance to relax, mix, and mingle. A cash bar and muchies will be provided.

Everyone is encouraged to attend the annual **Business Meeting**, scheduled on Friday from 9:30am through 10:20am in the Sauganash Ballroom East. President Kim Metcalf will preside over an agenda of issues critically important to the association. Your input is both needed and welcome!

Judith Gappa, Professor of Educational Administration at Purdue University, will deliver a Luncheon Address titled "The Academic Career in the 21st Century: New Options for Faculty" on Friday during the catered luncheon. Gappa is a leading researcher on the changing roles and expectations facing higher education faculty. Remember, you must pre-register for the conference in order to be guaranteed a seat at the Luncheon! Immediately following the Luncheon Gappa will provide a follow-up address, and be available for questions, in the Lake House room beginning at 1:40pm.

A **Special Symposium**, titled "This, Too, Shall Pass: A Symposium for Doctoral Students" will take place on Friday afternoon at 4:10pm in the Shakespeare Hotel. This session is aimed at helping all of our current graduate students understand the trials and rigors of graduate education, and to provide hope – along with concrete suggestions – from those who have already gone through. All current (and former) graduate students are invited to attend.

The highlight of Friday evening will be the **President's Reception**, scheduled from 7:00pm until midnight in the Wolf Point Prefunction Room (15th floor of the Holiday Inn Mart Plaza). Your host for the evening will be Kim Metcalf, the current President of MWERA. This reception promises to be a great time with fine food, drink and company for all!

Program Chair Jeffrey Hecht will be available to listen to your comments about the 1998 Annual Meeting at the **Conference Feedback** session Saturday morning starting at 8:00am in The Bull's Head room. This session provides you with an opportunity to elaborate on the comment forms from each session. Your feedback will be brought forward into the **Conference Planning** session scheduled for 10:30am in the same room. *All Senior and Junior Division Chairs for the 1999 conference should attend this Conference Planning session to get a jump start on next year!*

Kim Metcalf, Associate Professor from Indiana University and President of MWERA, will deliver the Presidential Address on Saturday at 9:30am in the Merchants Hotel. Metcalf's talk, titled "Free Market Policies and Public Education: At What (Opportunity) Cost?", will address the notion of vouchers for public education.

Professional Development Workshops

MWERA will sponsor a series of Professional Development Workshops held in conjunction with the Annual Meeting. These workshops are organized to meet specific training needs and to transmit specific research, development, and evaluation skills. **NOTE:** A $10.00 fee is charged for each workshop, and advance registration is strongly encouraged. All workshops are subject to cancellation for insufficient registration. Workshops may be open to on-site and same-day registration, space permitting.

W.1510.AH Qualitative-Quantitative Research Methodology: Exploring the Interactive Continuum

Division H: School Evaluation and Program Development
Wednesday, 3:10pm to 5:30pm — American House
CHAIR *Isadore Newman, University of Akron*
NOTES *Maximum Enrollment:* ***20****; Fee:* ***$10.00***
PRESENTERS
Isadore Newman, University of Akron; Barbara Moss, University of Akron

Qualitative research is being used with increasing frequency in the social sciences. It is important to identify when it is most appropriate to use qualitative-quantitative research strategies and how this relates to what Newman and Benz (1998) discuss as the artificial dichotomy. (They argue) "the two approaches are neither mutually exclusive nor interchangeable; rather, the actual relationship between the two paradigms is one of isolated events on a continuum of scientific inquiry." The objectives of this workshop are: (1) to describe the concept of the interactive continuum; (2) to discuss the concept of the qualitative-quantitative approach as a false dichotomy; (3) to discuss validity and legitimation of research; (4) to identify strategies to enhance validity and legitimation; (5) to apply the qualitative-quatitative approach to a variety of studies. Through the use of discussion and graphic presentation, this workshop will demonstrate how research has to be viewed as a holistic conceptualization in the world of research inquiry. It is important for good research to be aware of a variety of methods and validity enhancement techniques associated with these methods. This workshop will also emphasize the necessity that the research question dictates the selection of the research methods, and the consistency between the research question and methods necessary for good research regardless of whether it is qualitative or quantitative.

W.1510.BH MWERA Association Council and Officers Orientation

MWERA
Wednesday, 3:10pm to 5:30pm — The Bull's Head
CHAIR *Sharon L. McNeely, Northeastern Illinois University*
NOTES *Maximum Enrollment:* ***25****; Fee:* ***N/C***
PRESENTERS
Sharon L. McNeely, Northeastern Illinois University; Gregory J. Marchant, Ball State University; Kim K. Metcalf, Indiana University

This session will provide orientation for newly elected Association Council members and MWERA officers. The session will overview our By-Laws, Policies and Procedures, history, and issues that all elected officials should be familiar with as they start serving the Association. All members holding elected positions within the Association are requested to attend this session.

W.1510.LH Delivering Problem-Based Learning Utilizing a CD-ROM Enhanced, Internet-Based Delivery System

Division K: Teaching and Teacher Education
Wednesday, 3:10pm to 5:30pm — Lake House
CHAIR *Scott B. Wegner, Southwest Missouri State University*
NOTES *Maximum Enrollment:* ***20****; Fee:* ***$10.00***
PRESENTERS
Scott B. Wegner, Southwest Missouri State University; Allan Crader, Southwest Missouri State University; Ken Holloway, Southwest Missouri State University; Sandra Wegner, Southwest Missouri State University

Until recently the use of Internet and its attendant technologies at the university level has been primarily been for research and, in limited capacities, for communications. The use of the Internet for instructional delivery, though increasing greatly every day, is still a relatively new frontier. In this workshop presenters, utilizing a two-year pilot program as a focus, will have participants explore the application of Internet and CD-ROM technologies to problem-based learning. Audience participation will include using problem development strategies, storyboarding content for CD-ROM support and discussion of logistical problems surrounding Internet-Based delivery of instruction.

W.1510.SP Towards a Better Understanding of Response Aberrance Indices

Division D: Measurement and Research Methodology
Wednesday, 3:10pm to 5:30pm — Shakespeare Hotel
CHAIR *Ayres G. D'Costa, The Ohio State University*
NOTES *Maximum Enrollment:* ***15****; Fee:* ***$10.00***
PRESENTERS
Ayres G. D'Costa, The Ohio State University

This study examines the five indices: Sm, Infit, Outfit, ECI2, ECI 14, and Lz, in terms of their sensitivity to Guessing and Carelessness as measured by two indices, Bs and Wc, posed as criterion aberrance indices. The specific research questions are: (1) What is the nature of the aberrance that each specific Index is measuring? Can the response pattern serve to illustrate the nature of the Index?; (2) How is the Index interpreted? Are there standardized units for interpretation? Should standard cut-offs be used for clinical interpretation?; (3) Is the Index unique, or is it unusually correlated with another Index?; (4) Can the Index be interpreted independently? Or is its value dependent on another measure, such as the Total Score?; and (5) Is the Index independent of the skewness of the distribution of person ability, item difficulty, or sample size, test length?

T.1510.BH Creating, Training, and Sustaining a Mentor Teacher Program

Division K: Teaching and Teacher Education
Thursday, 3:10pm to 5:30pm — The Bull's Head
CHAIR *Janet T. Bercik, Northeastern Illinois University*
NOTES *Maximum Enrollment: **40**; Fee: **$10.00***
PRESENTERS
Janet T. Bercik, Northeastern Illinois University; Elaine Bilowich, Maine East High School; Joanne Fallon, Maine East High School; Judith Flynn, Nelson School; Harriet Johnson-Naden, Northeastern Illinois University; Patricia Lindoerfer, Mark Twain School; Linda Merkel, Walden School; Katherine Zlogar, Washington School

Mentoring is the "hot topic" and "buzz word" that appears on the lips of educators. Universities and professional organizations are analyzing how they train their novices; and states are looking at and trying to reverse the trend of teacher loss. The issue is becoming one of how, when, and why to mentor. These are issues that Northeastern Illinois University has addressed through its collaborative Goals 2000 Preservice Teacher Education Program. Teachers, students, and university personnel have joined forces to provide early support to the preservice teacher that will ease their acculturation into school systems. There is no one specific way to do it, so general guidelines were developed that will help set the stage for the novice. These guidelines assist mentor teachers in designing their roles within the school and district, and with the university. Their roles are continuously reevaluated and redefined as necessary.

F.1340.AH Tricks of the Teaching Statistics Trade

Division D: Measurement and Research Methodology
Friday, 1:40pm to 4:00pm — American House
CHAIR *Dennis W. Leitner, Southern Illinois University at Carbondale*
NOTES *Maximum Enrollment: **30**; Fee: **$10.00***
PRESENTERS
Dennis W. Leitner, Southern Illinois University at Carbondale; Beverly J. Dretzke, University of Wisconsin - Eau Claire; Schuyler W. Huck, University of Tennessee; Thomas R. Knapp, The Ohio State University; Joel R. Levin, University of Wisconsin - Madison

The objective of this workshop is to share presenters' and participants' experiences in the teaching of difficult statistical concepts. Useful demonstrations/concretizations which have been found to work successfully in the classroom will be presented. The teaching and learning of statistics, particularly the introductory course, is always difficult. Many members of Division D of MWERA teach an introductory course in statistics; it is likely that they would find this workshop particularly attractive. The workshop proper will last for about two hours, with no more than one and one-half hours devoted to the presenters' demonstrations and explanations, leaving at least a half hour for participants' contributions and discussions. It is anticipated that the give-and-take will extend long after that two-hour session, however.

S.0800.CH Training Trainers for Technology Integration: Beyond "How To"

MWERA
Saturday, 8:00am to 9:20am — Columbian House
CHAIR *Sharon L. McNeely, Northeastern Illinois University*
NOTES *Maximum Enrollment: **10**; Fee: **$10.00***
PRESENTERS
Sharon L. McNeely, Northeastern Illinois University

As schools move from a model of "technology training" which is focused on basic use to models of professional development that rely heavily on teachers being the facilitators or co-facilitators, there is often a gap in the process which results in ineffective peer training. This workshop will provide faciliative models to help those that train teachers to be trainers/facilitators to work with other teachers to promote effective professional development. The workshop will especially focus on examples of facilitative trainings related to technology integration in the classroom.

Receptions and Socials

Welcome Social
Wednesday, 9:30pm - 11:00pm, Suaganash Ballroom East
Hosted by the Department of Educational Administration and Foundations at Illinois State University.

Cracker Barrel Social
Thursday, 5:30pm - 7:00pm, Wolf Point Prefunction Room
A MWERA tradition!

President's Reception
Friday, 7:00pm - Midnight, Wolf Point Prefunction Room
Hosted by Kim Metcalf, MWERA President.

Exhibits

All registrants are encouraged to visit the Exhibits in the Hallway of the 14th Floor Lobby. MWERA is pleased to welcome back many of the firms which have exhibited with us before, along with several new ones! The Exhibits will be open from 9:00am to 4:00pm on Friday.

Program on the Internet

This year's Annual Program is available on the Internet at:

http://tierlab.ilstu.edu/MWERA-98

The on-line program contains all of the information in the printed program. In addition, users may search the program for presentations matching specific descriptors, key words in the title or abstract of the paper, or specific presenters. In addition full text of each presentation's abstract is available on-line. This site is courtesy of the Technological Innovations in Educational Research Laboratory in the Department of Educational Administration and Foundations at Illinois State University, Jeffrey B. Hecht, Principal Investigator.

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Division G: Social Context of Education
Mary Ann Wham, *University of Wisconsin - Whitewater*
Susan J. Lenski, *Illinois State University*

Division H: School Evaluation and Program Development
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John W. Fraas, *Ashland University*

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Division K: Teaching and Teacher Education
Connie L. Bowman, *University of Dayton*
Maria Elena Galvez-Martin, *The Ohio State Univ at Lima*

Exhibits
Sharon McNeely, *Northeastern Illinois University*

Proposal Reviewers

The 1998 Program Committee wishes to express our appreciation to the following individuals who donated their time to assist in the process of reviewing proposals:

Shauna M. Adams, *University of Dayton*
Bernard Arenz, *University of Texas - El Paso*
Robert Atkinson, *University of Wisconsin - Madison*
Charlotte Batambuze, *Illinois State University*
Mary Bendixen-Noe, *The Ohio State University - Newark*
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Cynthia S. Campbell, *Southern Illinois Univ at Carbondale*
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A. Gigi Fansler, *Illinois State University*
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Perry Gallagher, *Harper Community College*
Maria Elena Galvez-Martin, *The Ohio State Univ at Lima*
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Eddie E. Glenn, *Illinois State University*
Rodney Greer, *Western Illinois University*
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Katie Kinnucan-Welsch, *University of Dayton*
Cheryl Kish, *Northern Illinois University*
Charles Kline, *Purdue University*
Kaetlyn Lad, *Texas A&M University at Corpus Christi*
Kevin C. Larkin, *American Dental Association*
Susan G. Locke, *Northern Illinois University*
Elizabeth T. Lugg, *Illinois State University*
R. Andrew Lugg, *Illinois State University*
Charles Manges, *Texas A&M University at Corpus Christi*
Barbara N. Martin, *Southwest Missouri State University*
Kaye M. Martin, *Muskingum College*
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Isadore Newman, *University of Akron*
Thomas R. O'Neill, *Amer Society of Clinical Pathologists*
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George J. Petersen, *Southwest Missouri State University*
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Jacqueline C. Rickman, *Western Illinois University*
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Explanation of Session Numbers

example: T.0800.LH **The Evolving Roles of the Modern Principal**

T	Day of Session	**W** for Wednesday, **T** for Thursday, **F** for Friday, and **S** for Saturday
0800	Time Session Begins	Using a 24 hour clock: 0800 is 8:00am, 1340 is 1:40pm
LH	Room	**AH** is American House, **CH** is Columbian House, **LH** is Lake House, **MA** is Mansion House, **ME** is Merchants Hotel, **SE** is Sauganash Ballroom East, **SW** is Sauganash Ballroom West, **SP** is Shakespeare Hotel, **SB** is Steamboat Hotel, **BH** is The Bull's Head, **WS** is Western Stage House, and **WP** is the Wolf Point Prefunction Room

Conference Registration and Hotel Reservation

Attending MWERA-98 begins with a two-step process: registering for the conference and reserving a room at the hotel. These two steps require the completion of two different forms, mailed to two different locations, with different information needed and deposits. **DO NOT SEND YOUR CONFERENCE REGISTRATION TO THE HOTEL, OR SEND YOUR HOTEL RESERVATION IN WITH YOUR CONFERENCE REGISTRATION!** This can delay your registration/reservation, or result in your not being registered for the conference and/or not having a place to stay in Chicago.

Pre-Registration vs. On-Site Registration

MWERA allows both pre-registration and on-site registration; however, for the following reasons, pre-registration is strongly encouraged. Pre-registrants have first opportunity to enroll in Workshops, to purchase Materials, and to attend the catered Luncheon on Friday. Pre-registration is also less expensive! To pre-register for the 1998 Annual Meeting you must complete the form on the following page and return it, with your check or money order for payment in full, to Jean Pierce, MWERA's Executive Officer.

Pre-registrations must be postmarked by September 22nd to qualify for the reduced rates!

On-site registration will be available at the registration desk on the 14th Floor of the Holiday Inn Mart Plaza beginning at 11:00am on Wednesday, October 14th and continuing though 5:00pm on Friday, October 16th.

The dates of our conference (October 14 - 17, 1998) are very busy ones in the city of Chicago, with several conventions and activities all going on at the same time. Hotel space will be tight, if not completely unavailable, to those who do not have confirmed reservations. Our convention hotel, the Holiday Inn Mart Plaza, is holding a block of rooms for MWERA-98 attendees; however, they will only hold these rooms until September 22nd!To ensure that you have a place to stay please make your reservations with the hotel early, since once these rooms are gone we cannot guarantee housing anywhere in downtown.

Hotel Facilities and Services

Adjacent to the Chicago Merchandise Mart and the World Trade Center - Chicago, the Holiday Inn Mart Plaza is conveniently located in downtown Chicago, only 45 minutes from Chicago's O'Hare and Midway airports and just a short ride from Union Station. The hotel is very close to the entertainment district of River North, Chicago's most exciting neighborhood, and the Loop. Newly renovated guest and meeting rooms promise a comfortable stay. Numerous dining spots are convenient to the hotel, as well as the Inn's own attractions: Regions, An American Cafe; Brio, the Lounge with Attitude; and The Lobby Bar. Services at the hotel include: 24 hour bellman service, self-service laundry (on the 23rd floor), an attached parking facility with unlimited in/out privileges at a reasonable rate, drug store, florist, gift shop, U.S. Post Office, FedEx Office, Bank, and a retail indoor mall - the shops at the Mart. Hourly computer rental, photocopy, and layout production services are all located within a short walk of the hotel.

MWERA will provide a standard overhead projector in each presentation room throughout the conference. Presenters may use this projector with overhead transparencies or computer-projection systems; however, it is up to each presenter to either provide his or her computer and projection unit (e.g., LCD plate) or to rent one from the hotel. The hotel has a wide variety of audio-visual equipment for rent. Contact the hotel directly well before the meeting for your needs, hotel pricing and availability, and payment.

MWERA-98 Conference Registration Form

October 14 - 17, 1998 – Holiday Inn Mart Plaza, Chicago, IL

Your Name: _____
(First Name) (Middle Initial) (Last Name)

Affiliation: _____

Mailing Address: _____

_____

Office Phone: ( ) FAX: ( )

Home Phone: ( ) E-mail: _____

Highest Degree: _____ Institution Awarding Degree: _____

Area of Specialization: _____ MWERA Division Preference: _____

Is this your first MWERA conference? ❑ **Yes** ❑ **No** If YES, how did you learn about MWERA? _____

Workshop Registration

Advance registration for workshops is strongly encouraged. All workshops are subject to cancellation for insufficient registration, and are open to on-site and same-day registration on a space permitting basis only.

❑ W.1510.AH	$10.00
❑ W.1510.BH	N/C
❑ W.1510.LH	$10.00
❑ W.1510.SP	$10.00
❑ T.1510.BH	$10.00
❑ F.1340.AH	$10.00
❑ S.0800.CH	$10.00

Total Workshop Fees →→→→

Meeting Registration

	By 09/22/98	After 09/22/98
MWERA Member	$45.00	$55.00
Non-Member	$50.00	$60.00
Student Member (see note below)	$30.00	$35.00
Attending Luncheon Only	$25.00	$28.00

TOTAL Registration Fee Enclosed: _____

Membership Dues

	Regular	Student
1998 Membership (see note below)	$18.00	$10.00
1999 Membership	$18.00	$10.00
Life Membership	$180.00	$180.00

TOTAL Membership Dues Enclosed: _____

MWERA-98 Materials

	Cost per	Qty	Total
MWERA Membership Directory	$8.00		
MWERA-98 Program Abstracts	$6.00		
MWERA Lapel Pin	$3.00		

TOTAL Materials Costs Enclosed: _____

TOTAL Workshop Fees Enclosed: _____

TOTAL AMOUNT ENCLOSED: _____

The Friday Luncheon is included in the Registration Fee. Please help us plan for the correct number of attendees!

Will you be attending the Friday Luncheon? ❑ **Yes** ❑ **No**

Will you require a special menu? ❑ **Yes** ❑ **No** If YES, please describe: _____

Will you be staying at the Holiday Inn Hotel? ❑ **Yes** ❑ **No** If YES, which nights (circle all that apply): **Tue Wed Thu Fri Sat**

Make your check or money order payable to "**MWERA**". **Register before September 22, 1998 to receive the lowest conference rates!**
Persons applying for Student membership must provide proof of student status (copy of a current student ID or registration, or letter from advisor).
All presenters must register for the meeting and be a current (1998) member of the Association. New presenters may join using this registration.

Mail completed form and payment to
Dr. Jean Pierce
Northern Illinois University
Department EPCSE
DeKalb, Illinois 60115

Holiday Inn Mart Plaza Hotel Reservation Form

Mid-Western Educational Research Association Meeting

October 14 - 17, 1998

Your Name: _____
(First Name) (Middle Initial) (Last Name)

Company: _____

Mailing Address: _____

_____

Day Telephone: ( )

Accommodations Requested

Arrival Date: ____ / ____ / ____

Departure Date: ____ / ____ / ____

Bed Type: ❑ Single (1 King) ❑ Double (2 Doubles)

Smoking Preference: ❑ Smoking ❑ Non-Smoking

Number of People:
- ❑ Single ($120.00 / night)
- ❑ Double ($135.00 / night)
- ❑ Triple ($150.00 / night)
- ❑ Quad ($165.00 / night)

Name(s) of Roommate(s) (if any): _____

Special Needs: _____

To confirm your reservation, the hotel requires a first nights deposit or a credit card guarantee.

Method of Payment

❑ Check or Money Order

❑ Credit Card (indicate card): ❑ MasterCard ❑ Visa ❑ American Express ❑ Discover ❑ Diners Club

Credit Card Number: _____

Name on Credit Card: _____

Expiration Date: _____

Signature: _____

You must cancel this reservation prior to 6:00pm on your expected date of arrival to avoid billing on your credit card for the first night's room and tax or the loss of your deposit. The above rates do not include state and local taxes. Automobile parking (non-valet) is available at the hotel for an additional $12 per day (plus taxes) for registered hotel guests. Check in time is 3:00pm, check out time is Noon. On site luggage storage is available for early arrival and late check out. **The above group rates are only guaranteed until SEPTEMBER 22, 1998!**

Mail, FAX, or telephone completed form and deposit information to

Holiday Inn Mart Plaza
350 North Orleans
Chicago, IL 60654
(312) 836-5000
FAX: (312) 222-9508

1293

Getting to the Conference

Holiday Inn Mart Plaza
350 North Orleans
Chicago, IL 60654
(312) 836-5000
FAX: (312) 222-9508

O'Hare Airport to the Holiday Inn (3 Options)

1. **Take a CTA train** to downtown for about $2.50. Catch the train in the basement of Terminal 3. Take the "A" or "B" line. Get off at the Clark/Lake station. Transfer to the "Brown" line (Ravenswood), and take this to the Merchandise Mart.
2. **Take the Continental Airport Bus** for about $15.00 one way or $28.00 round trip. No reservations are required from the airport. See the agent at the booth in the lower level baggage claim area.
3. **Take a cab** for about $28.00 one way. Wait in the cab stand area. In off-hours a ride takes about 30 minutes. In rush hours (7 - 10 am, 3 - 7 pm) the ride could take an hour or more. Tips average 15 - 20%.

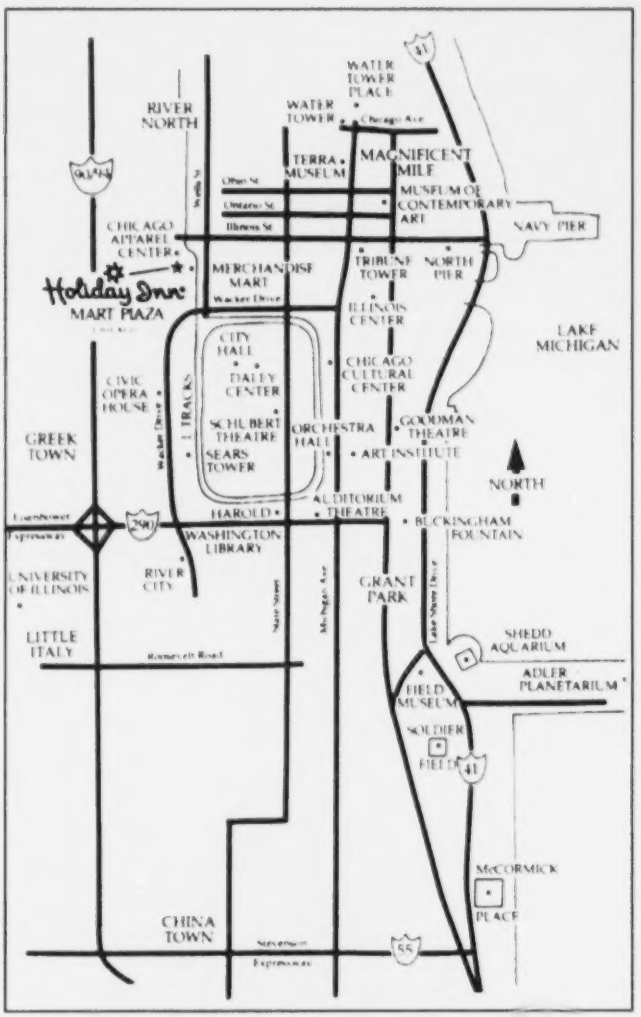
Midway Airport to the Holiday Inn (3 Options)

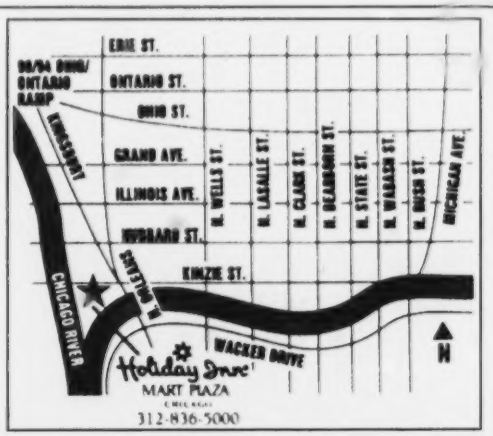
1. **Take a CTA train** to downtown about about $2.50. Catch the train at the east end of the airport. Get off at the Clark/Lake station. Transfer to the "Brown" line (Ravenswood), and take this to the Merchandise Mart.
2. **Take a Continental Airport Bus** for about $11.00 one way or $20.00 round trip. No reservations are required from the airport. See the agent at the booth for tickets.
3. **Take a cab** for about $25.00 one way. Wait in the cab stand area. See O'Hare information above regarding time.

Driving and Parking Downtown (3 Options)

1. **From the South, East, or West:** Take I-90/94 (Dan Ryan). Exit at Washington Street East (Exit 51C). Turn right onto Washington. Go to Wacker Drive and turn left. Make another left at Orleans Street and cross over the bridge. The hotel is on the left-hand side.
2. **From I-88:** I-88 connects to 290 (Eisenhower). Exit at Franklin Street. Follow Franklin until it turns into Orleans Street (just over the river). The hotel is on the left-hand side.
3. **From the North, I-90/94 (Kennedy Expressway):** Exit at Ohio Street. Go to Wells Street (3rd light). Turn right, cross the river and turn right onto Wacker Drive. Go one block, turn right onto Orleans, and cross the bridge. The hotel is on the left-hand side.

The Holiday Inn Mart Plaza sits atop The Apparel Center. Take the Elevators on the first floor of The Apparel Center to the 15th Floor Hotel Lobby.





Chronological Listing of Sessions

Wednesday, October 14, 1998

W.1510.AH **Qualitative-Quantitative Research Methodology: Exploring the Interactive Continuum**

Division H: School Evaluation and Program Development — Workshop
Wednesday, 3:10pm to 5:30pm — American House
CHAIR *Isadore Newman, University of Akron*
NOTES *Maximum Enrollment: **20**; Fee: **$10.00**; Pre-registration required, on-site registration only if space available.*

W.1510.BH **MWERA Association Council and Officers Orientation**

MWERA — Workshop
Wednesday, 3:10pm to 5:30pm — The Bull's Head
CHAIR *Sharon L. McNeely, Northeastern Illinois University*
NOTES *Maximum Enrollment: **25**; Fee: **N/C**; Orientation for Association Council members and MWERA officers.*

W.1510.LH **Delivering Problem-Based Learning Utilizing a CD-ROM Enhanced, Internet-Based Delivery System**

Division K: Teaching and Teacher Education — Workshop
Wednesday, 3:10pm to 5:30pm — Lake House
CHAIR *Scott B. Wegner, Southwest Missouri State University*
NOTES *Maximum Enrollment: **20**; Fee: **$10.00**; Pre-registration required, on-site registration only if space available.*

W.1510.SP **Towards a Better Understanding of Response Aberrance Indices**

Division D: Measurement and Research Methodology — Workshop
Wednesday, 3:10pm to 5:30pm — Shakespeare Hotel
CHAIR *Ayres G. D'Costa, The Ohio State University*
NOTES *Maximum Enrollment: **15**; Fee: **$10.00**; Pre-registration required, on-site registration only if space available.*

W.2000.SE **Kick-Off Address**

MWERA — Invited Address
Wednesday, 8:00pm to 9:30pm — Sauganash Ballroom East
CHAIR *Jeffrey B. Hecht, Illinois State University*
PRESENTATION
Policy Research in Higher Education: Data, Decisions, & Dilemmas.
Edward Hines, Illinois State University

The world of policy research in higher education is far removed from higher education, itself. Why is this? What are the consequences for the academy? For policymakers? For faculty? For researchers? In this presentation, Edward Hines will identify trends in state higher education support, prospects for future funding of higher education by state governments, and implications for campus leaders, faculty, and researchers. For 40 years *Grapevine* has served as a national data base of interstate higher education finance data. Edward Hines is Editor and publisher of *Grapevine* data at Illinois State University. In addition to being the Editor and publisher of *Grapevine*, Hines is a University Distinguished Professor and Senior Associate in the Center for Higher Education and Educational Finance at Illinois State University. He is widely known as a national data collector and commentator on higher education finance, and has been interviewed on national television and public radio. His data and accompanying interviews have also appeared in most of the nation's major newspapers including *The New York Times*, *The Los Angeles Times*, *The Chicago Sun-Times*, and the *Washington Post*.

W.2130.SE **Welcome Social**

MWERA — Social
Wednesday, 9:30pm to 11:00pm — Sauganash Ballroom East
NOTES *Hosted by the Department of Educational Administration and Foundations at Illinois State University.*

1295

Chronological Listing of Sessions

Thursday, October 15, 1998

T 0800 AH New Motivation Research in Education

Division C: Learning and Instruction — Paper Presentation
Thursday, 8:00am to 9:20am — American House

CHAIR *Beverly J. Dretzke, University of Wisconsin - Eau Claire*

PRESENTATIONS

Assessment of Expectancy-Value Motivation Model using a Secondary Analysis of the Longitudinal Study of American Youth (LSAY) Data. *Thomas L. Pourchot, Northern Illinois University*

Attributions, Aspirations, and Academic Confidence: How Do Gifted Females Measure Up? *Darci M. Ament, University of Wisconsin - Eau Claire; Beverly J. Dretzke, University of Wisconsin - Eau Claire*

Children's Achievement Motivation and Participation in Peer Tutoring. *Linda D. Lange, Dickinson State University*

T 0800 BH Professionals and Children with Disabilities

Division E: Counseling and Human Development — Paper Presentation
Thursday, 8:00am to 9:20am — The Bull's Head

CHAIR *Eddie E. Glenn, Illinois State University*

PRESENTATIONS

An Investigation of the School Psychologist's Role in Planning an Educational Program for Students with Hearing Impairments. *Cheryl J. Levin, Loyola University of Chicago; Ronald R. Morgan, Loyola University of Chicago*

Factors Affecting Teacher Attitudes Toward Inclusionary Educational Practices. *Robert G. Harrington, University of Kansas; Renee Spears, University of Kansas; Andrea Stevenson, University of Kansas*

The Identification and Delivery of Counseling Strategies for Special Needs Students. *Mack L. Bowen, Illinois State University*

T 0800 CH An Examination of Studies Involving Rasch Measurement Techniques and Research Methodology

Division D: Measurement and Research Methodology — Paper Presentation
Thursday, 8:00am to 9:20am — Columbian House

CHAIR *Bruce G. Rogers, University of Northern Iowa*

PRESENTATIONS

A Many-Faceted Rasch Analysis of Social Studies Performance. *Shawn M. Quilter, Eastern Michigan University; Cher C. Hill, State University of West Georgia*

Determining the Multivariate Assumptions of a Four Dimensional Instrument Designed to Follow-up Elementary and Secondary Level Graduates of Multiple Teacher Education Institutions. *Mohammed A. Rahman, The Ohio State University; William E. Loadman, The Ohio State University*

Establishing BEST Practices in the State of Ohio: A Rasch Analysis of Nominations. *Anna Marie M. Thomas, The Ohio State University; Gwo-Jen Guo, The Ohio State University; William E. Loadman, The Ohio State University*

One Examination and Four Analyses: Classical Test Theory, Generalizability Theory, The BWSI & Rasch Measurement Compared & Contrasted. *Anna Marie M. Thomas, The Ohio State University*

Sensitivity of five Rasch-Model-Based Fit Indices to Person and Item Aberrances. *Hyunsoo Seol, The Ohio State University; Ayres G. D'Costa, The Ohio State University; Thomas R. Knapp, The Ohio State University; William E. Loadman, The Ohio State University*

T 0800 EH The Evolving Roles of the Modern Principal

Division A: Administration — Paper Presentation
Thursday, 8:00am to 9:20am — Lake House

CHAIR *Charles Manges, Texas A&M University at Corpus Christi*

PRESENTATIONS

An Examination of the Principal's Role in Managing the Paradox of State Mandated Improvement and Accountability. *Jenny S. Tripses, Bloomington District 87; Dianne Ashby, Illinois State University*

Combating Teacher Burnout: The Role of the Principal. *Barbara L. Brock, Creighton University*

Human and Fiscal Resources Management in the Local School Community: A View From Selected Schools. *Larry McNeal, Illinois State University*

The Principal's Role in Shaping Organizational Culture in the Context of School Improvement Efforts. *Martin H. Jason, Roosevelt University*

T,0800.SB **Examining Pedagogy and Curriculum**

Division G: Social Context of Education — Paper Presentation
Thursday, 8:00am to 9:20am — Steamboat Hotel

CHAIR *Susan J. Lenski, Illinois State University*
DISCUSSANT *Mary Ann Wham, University of Wisconsin - Whitewater*
PRESENTATIONS

An Analysis of the Attitudes of Daycare Providers Toward Inclusion. *Sheila F. Lairson, Warren County Bd. MR/DD; Barbara M. De Luca, University of Dayton*

Exchange City: The Effects of A Simulated Economic and Civic Community on 5th Grade Inner-City Youth. *JaDora F. Sailes, Indiana University*

Predicting and Attributing for Test Scores: Successful-Unsuccessful College Students. *Peter J. Brady, Clark State Community College*

Teacher's and Student's Perceptions of a Conflict Mediation Program. *Barbara N. Martin, Southwest Missouri State University*

T,0800.SP **Professional Development: Suggested Models**

Division H: School Evaluation and Program Development — Paper Presentation
Thursday, 8:00am to 9:20am — Shakespeare Hotel

CHAIR *Carole Newman, University of Akron*
DISCUSSANT *Alice Darr, University of Akron*
PRESENTATIONS

A Research-Based Literacy Training Model Linking Teacher Learning and Student Achievement. *E. Jane Williams, The Ohio State University; Pat Gordon, Hedges Elementary School*

Project PREPARE: Collaborating for Professional Development and School Improvement. *M. A. Garmon, Western Michigan University; Troy V. Mariage, Western Michigan University*

Service Learning: How Does That Fit in my Course? *Bonnie Dunwoody, Saint Mary's College*

T,0800.WS **Special Education and Inclusion**

Division K: Teaching and Teacher Education — Paper Presentation
Thursday, 8:00am to 9:20am — Western Stage House

CHAIR *Rose Mary Scott, University of Wisconsin - Parkside*
DISCUSSANT *Richele O'Connor, Wright State University*
PRESENTATIONS

Teachers' Attitudes Toward Inclusive Education. *H. Keit Cochran, Missouri Southern State College*

The Relationship Between Time Included in a General Education Classroom and the Self-Concepts of Learning Disabled and Mentally Retarded Students. *Stanley E. Wigle, University of Tennessee - Martin; Donald F. DeMoulin, University of Tennessee-Martin*

The Special Education Competencies of Special Educators. *Stanley E. Wigle, University of Tennessee - Martin; Daryl J. Wilcox, Wayne State College*

Reminder!

Division Meetings have been scheduled throughout the day on both Thursday and Friday!
Get involved in the division(s) of your choice.
Attend divisions meetings and become an active part of MWERA!

1297

T.0930.SI Keynote Address

MWERA — Invited Address
Thursday, 9:30am to 10:20am — Sauganash Ballroom East

CHAIR *Jeffrey B. Hecht, Illinois State University*

PRESENTATION

Western Governors University: New Challenges, New Technologies, New University.
Robert C. Albrecht, Western Governors University

Over two years ago representatives of the governors of sixteen western states met and drafted plans to form the largest "virtual university" yet conceived. Their plan called for the creation of a consortium of government and private industry to form a new institution. This new partnership would list specific competencies in selected academic and technical areas, then award degrees in the fields to students who mastered these competencies. Participating colleges, universities, and corporations could market qualifying distance learning courses to prospective students, who would then take these courses in an eclectic mix of in-person, traditional distance education, and Internet-based forums. After two years of preparation, and over $9-million dollars in fund raising, WGU will open its virtual doors in the next few months to its first on-line students. Albrecht's remarks at the Keynote address and Follow-Up Discussion will focus on the aspirations of the competency-based, distance education model being implemented by WGU, and the current and future challenges facing both WGU and traditional institutions of higher education. He will also overview the operations and technologies of WGU, giving attendees a glimpse into the university of the 21st century.

Robert C. Albrecht serves as the Chief Academic Officer of the Western Governors University, heading the Colorado office of the University. In the summer of 1996 he had been named as co-director of the University; in 1997 at the first meeting of the Board of WGU, he was designated the Chief Academic Officer. From 1989 until 1997, Albrecht served as the Associate Vice President of the University of Colorado, chiefly dealing with technology across the four campuses of the University. After degrees from Illinois, Michigan and Minnesota, where he was awarded the Ph.D. in American Studies, Albrecht taught at the University of Chicago and the University of Oregon. He then served in positions in academic affairs at the University of Northern Colorado and the Montana University System until 1989. Albrecht's publications include books and journal articles in American literature, academic administration and distance learning.

T.1030.AH New Member Welcome

MWERA — Meeting
Thursday, 10:30am to 11:50am — American House

CHAIR *Mary Ann Wham, University of Wisconsin - Whitewater*

NOTES *All new and existing MWERA members are invited to this new member welcome session. Come and meet each other, and get to know what this wonderful organization is all about!*

T.1030.BH Technology and its Impact upon Curriculum

Division B: Curriculum Studies — Paper Presentation
Thursday, 10:30am to 11:50am — The Bull's Head

CHAIR *James H. Powell, Ball State University*

DISCUSSANT *Laurie Thomas, Ball State University*

PRESENTATIONS

An Analysis of Attitudes of Fourth-Grade Students Toward the Classroom Computer. *Ulrike B. Blair, University of Dayton; Barbara M. De Luca, University of Dayton*

Learning Strategies for Coping with Computer Technology in a Distance Learning Environment. *Nancy G. Saunders, Ball State University*

Technological Stumbling Blocks for Schools: Readiness, Revenue, and Integration. *Brad E. Oliver, Ball State University; Jay C. Thompson, Jr., Ball State University*

T.1030.CH Division E Business Meeting

Division E: Counseling and Human Development — Meeting
Thursday, 10:30am to 11:50am — Columbian House

SR. DIV CHAIR *E. Gabriella Caldwell-Miller, Illinois State University*

JR. DIV CHAIR *Eddie E. Glenn, Illinois State University*

T.1030.HI **New Trends in Administrator Preparation Programs**

Division A: Administration — Paper Presentation
Thursday, 10:30am to 11:50am — Lake House

CHAIR *Roger V. Bennett, Southwest Missouri State University*
PRESENTATIONS

A Collaborative Model Between University and Practicing Administrators to Create a Geographically-Based Administrative Preparation Program. *Robert A. Ludwig, Bowling Green State University; Marcia Salazar-Valentine, Bowling Green State University; Eugene T. Sanders, Bowling Green State University*

Benefits and Shortcomings of Entry-Level Administrator Mentoring Programs: The First-Year Principal's Perspective. *George B. Simon II, Bethel Local School*

Developing Emotional Intelligence: A Key Component in the Preparation of Aspiring Administrators. *Charles Manges, Texas A&M University at Corpus Christi*

Field-Based Principal Preparation Program: An Ongoing Study of Its Effectiveness. *Randall L. Turk, Wichita State University*

T.1030.MA **Division F Business Meeting**

Division F: History and Historiography — Meeting
Thursday, 10:30am to 11:50am — Mansion House

SR. DIV CHAIR *Beth Johnson, Eastern Michigan University*
JR. DIV CHAIR *Louise E. Fleming, Ashland University*

T.1030.SB **Field Experience Sites**

Division K: Teaching and Teacher Education — Paper Presentation
Thursday, 10:30am to 11:50am — Steamboat Hotel

CHAIR *Carole Newman, University of Akron*
DISCUSSANT *Carole Newman, University of Akron*
PRESENTATIONS

A Comparison of Two Dichotomous Field Experience Sites: Perspectives of a Pre-Service Teacher. *Joe D. Nichols, Indiana University - Purdue Univ at Fort Wayne; Shelley A. Sorg, Indiana/Purdue University*

Comparison of Field Experiences in India and the U.S.. *Hema Ramanathan, Butler University*

Profile of a Successfull PDS. *Rick A. Breault, University of Indianapolis*

T.1030.SP **Follow-up Discussion from the Keynote Address**

MWERA — Invited Address
Thursday, 10:30am to 11:50am — Shakespeare Hotel

PRESENTATIONS

Follow-up Discussion to the Keynote Address: "Western Governors University: New Challenges, New Technologies, New University". *Robert C. Albrecht, Western Governors University*

T.1030.WS **Preparing Teachers to use Contextual Teaching and Learning Strategies**

Division K: Teaching and Teacher Education — Symposium
Thursday, 10:30am to 11:50am — Western Stage House

CHAIR *Jean W. Pierce, Northern Illinois University*
PRESENTATIONS

Contextual Teacher Preparation at Alverno College. *Mary Diez, Alverno College*

Learning Society Guidelines for Teacher Preparation and Contextual Teaching: Do They Match? *Sandra Gibbs, National Council of Teachers of English*

Problem Based Learning as an Attribute of Contextual Teaching and Learning. *Jean W. Pierce, Northern Illinois University*

Self Regulation and Metacognition as Attributes of Contextual Teaching and Learning. *John Borkowski, University of Notre Dame*

The Role of Context in the Preparation of Teachers – Messages from Cognitive Research. *Ralph Putnam, Michigan State University*

T.1200.SE **MWERA Association Council Meeting**

MWERA — Meeting
Thursday, 12:00pm to 1:30pm — Sauganash Ballroom East

PRESIDENT *Kim K. Metcalf, Indiana University*
NOTES *All Mid-Western Educational Research Association Council Members and Officers should attend. Luncheon will be served.*

T.1340.AH **School Violence and Adolescent Suicide**

Division A: Administration — Symposium
Thursday, 1:40pm to 3:00pm — American House

CHAIR *Barbara N. Martin, Southwest Missouri State University*

PRESENTATION

School Violence and Adolescent Suicide: A Discussion About Their Reduction in Schools. *Kathryne M. Speaker, College of New Jersey; Roger V. Bennett, Southwest Missouri State University; George J. Petersen, Southwest Missouri State University; Jane Wolfle, Bowling Green State University*

T.1340.BH **Teacher Training**

Division K: Teaching and Teacher Education — Paper Presentation
Thursday, 1:40pm to 3:00pm — The Bull's Head

CHAIR *Dan Raisch, University of Dayton*

DISCUSSANT *Dan Raisch, University of Dayton*

PRESENTATIONS

A Comparison of Contextual Teacher Preparation Student Teachers with Traditionally Prepared Student Teachers. *Nadine M. Killmer, Iowa State University; Kathy R. Connor, Iowa State University*

A Study of Four Model Urban Early Childhood Programs: Implications for Teacher Training. *Lenore P. Wineberg, University of Wisconsin - Oshkosh*

The State of Public Education in the United States: Teacher Education Students' Perspectives. *Larry D. Cross, Governors State University; Kathleen Giuntoli, Governors State University; Glenna L. Howell, Governors State University; Elizabeth J. Johnson, Governors State University; Karen M. Peterson, Governors State University*

T.1340.CH **Methods in Educational History Research**

Division F: History and Historiography — Paper Presentation
Thursday, 1:40pm to 3:00pm — Columbian House

CHAIR *Doug A. Feldmann, Indiana University*

PRESENTATIONS

Application of Oral History Methods to Recover Informal Policy Implementation. *Lee S. Duemer, The University of Iowa*

Figures of Speech as a Tool for Constructing Educational History. *Dawn Clark; Beth Johnson, Eastern Michigan University*

Using Autobiography to Promote Reflective Thinking. *Louise E. Fleming, Ashland University*

T.1340.DH **Should Administrators be 'Virtually' Prepared? Developments in Educational Administration**

Division A: Administration; ICPEA — Symposium
Thursday, 1:40pm to 3:00pm — Lake House

NOTES *Special session sponsored by the Illinois Council of Professors of Educational Adminstration.*

T.1340.MA **Division B Business Meeting**

Division B: Curriculum Studies — Meeting
Thursday, 1:40pm to 3:00pm — Mansion House

SR. DIV CHAIR *James H. Powell, Ball State University*

JR. DIV CHAIR *Jay C. Thompson, Jr., Ball State University*

T.1340.SB **Engaging the Learner: Technology in Postsecondary Education**

Division J: Postsecondary Education — Paper Presentation
Thursday, 1:40pm to 3:00pm — Steamboat Hotel

CHAIR *Rodney Greer, Western Illinois University*

DISCUSSANT *Margaret A. Simpson, Northwestern University Medical School*

PRESENTATIONS

Assessing the Classroom Environment of the Virtual Classroom. *Susan M. Powers, Indiana State University; Michaeleen Davis, Indiana State University; Eileen Torrence, Indiana State University*

Postsecondary Giftedness, Learning Disabilities and the Engaged Learning Model. *Tom J. Cody, Western Illinois University; Jacqueline C. Rickman, Western Illinois University*

Students' Perspectives in a Web-Based Distance Education Course. *Noriko Hara, Indiana University*

T.1340.SP **A Strategic Program to Build Character and Self-Esteem Among Urban Adolescents**

Division E: Counseling and Human Development — Invited Address
Thursday, 1:40pm to 3:00pm — Shakespeare Hotel
CHAIR *Eddie E. Glenn, Illinois State University*
PRESENTATION
A Strategic Program to Build Character and Self-Esteem Among Urban Adolescents. *Othello Poulard, Center for Community Change*

T.1340.WS **Mentoring**

Division K: Teaching and Teacher Education — Symposium
Thursday, 1:40pm to 3:00pm — Western Stage House
CHAIR *Marcia Sheridan, Indiana University - South Bend*
PRESENTATION
Critical Issues in Mentoring and Mentoring Programs for Teachers. *Tom Ganser, University of Wisconsin - Whitewater; Deborah L. Bainer, The Ohio State University - Mansfield; Mary Bendixen-Noe, The Ohio State University - Newark; Barbara L. Brock, Creighton University; Carmen Giebelhaus, Ohio Department of Education; Charles Kent Runyon, Pittsburg (Kansas) State University; Anne D'Antonio Stinson, University of Wisconsin - Whitewater*

T.1510.BH **Creating, Training, and Sustaining a Mentor Teacher Program**

Division K: Teaching and Teacher Education — Workshop
Thursday, 3:10pm to 5:30pm — The Bull's Head
CHAIR *Janet T. Bercik, Northeastern Illinois University*
NOTES *Maximum Enrollment: **40**; Fee: **$10.00**; Pre-registration required, on-site registration only if space available.*

T.1510.LH **Illinois Council of Professors of Educational Administration Business Meeting**

Division A: Administration; ICPEA — Meeting
Thursday, 3:10pm to 4:00pm — Lake House

T.1510.SE **Roundtable Discussion/Poster Session #1**

MWERA — Roundtable Discussion/Poster
Thursday, 3:10pm to 4:00pm — Sauganash Ballroom East

TABLE 1 * Hot Topics Discussion: Can Faculty Evaluations be Customized to meet Everyone's Needs? *Steven J. Blatt, University of Dayton; Thomas Pickering, University of Southern Indiana*

TABLE 2 * Hot Topics Discussion: How Can We Make Special Education More Special? *Gloria Ann Dye, Washburn University; Kevin Davis, Southeast Kansas Education Service Center*

TABLE 3 * Hot Topics Discussion: The Gender Question: How Can We Teach to It? *P. Kay Duncan, Emporia State University; Kathleen Sparrow, Akron Public Schools*

TABLE 4 * Hot Topics Discussion: What Advances are Forseen in the 21st Century? *Diana M. Hunn, University of Dayton; Thomas Andre, Iowa State University*

TABLE 5 * Hot Topics Discussion: What will be the Role of the Media in Educating the Masses (in the 21st Century)? *James J. McCluskey, Central Michigan University; Susan M. Powers, Indiana State University*

TABLE 6 * Hot Topics Discussion: Will the Drop-Out Rates Drop Off in the Future? *Daniel Lynch, University of Wisconsin - Oshkosh; Judy Jackson May, Bowling Green State University*

TABLE 7 A Case Study of Adoption, Diffusion and Optimal Uses of Computers for Instruction at a Small College. *Alan C. Hueth, University of Dayton*

TABLE 8 A Program Evaluation of an HIV/AIDS Prevention Outreach Pilot Project in Havana, Cuba. *David E. Victorson, Indiana University*

TABLE 9 Are Differences Between Nontraditional and Traditional College Students in Memory Transfer Suggesting Classroom Segregation? *Paul D. Shuler, Oklahoma State University*

TABLE 10 At-risk Students Learn Facts though Higher-Order Instruction: An Oxymoron. *Sandra Gee, DuPage County (IL) Regional Office of Education; Matt DiCintio, Elmhurst College*

TABLE 11 Attitudes Toward Learning Community Courses. *Albert M. Bugaj, University of Wisconsin - Marinette*

TABLE 12 Forgiveness Education and the Psychological Well-Being of Clergy. *Preston C. Van Loon*

TABLE 13 He Said She Said: Reflections on a Team Teaching Experience. *Gary T. Daytner, Indiana University; Rhonda Meyer, Indiana University-Bloomington*

TABLE 14 High Stakes for UnReliable Assessments? *Marta J. Coleman, Gunnison High School and Western State College; Jennifer J. Fager, Western Michigan University*

TABLE 15 Improving Attending Physicians' Teaching Skills Through Clinical Supervision. *Elizabeth A. Wilkins-Canter, Rush University*

TABLE 16 Perry: Fact, Fiction, and Outcomes Assessment. *Gordon P. Brooks, Ohio University*

TABLE 17 Protocol Materials: Passing Fad or an Idea Whose Time Has Finally Come? *Linda M. Holloway, Indiana University; Judith Longfield, Indiana University*

TABLE 18 Diversity in Higher Education: A Review of the Literature Focusing Upon Administrators. *Ernest E. Gibson, Governors State University; Burton A. Collins, Governors State University; Larry D. Cross, Governors State University; David E. Suddick, Governors State University*

TABLE 19 Teaching Preservice Educators About Paraeducators. *Mary E. Drechtrah, University of Wisconsin - Oshkosh*

TABLE 20 The Development of a Rating Scale: Documentation and Nongraded, Multiage Programs. *Richele O'Connor, Wright State University*

T.1610.AH Ways to Enhance Students' Self-Concepts

Division E: Counseling and Human Development — Symposium
Thursday, 4:10pm to 5:30pm — American House

CHAIR *Eddie E. Glenn, Illinois State University*

PRESENTATION

Ways to Enhance Students' Self-Concepts. *Thomas S. Parish, Kansas State University; Donald A. Boyd, Special Educational Resource Center; Joycelyn G. Parish, Orkand Corporation*

T.1610.CH Mid-Western Educational Researcher Editorial Board Meeting

MWERA — Meeting
Thursday, 4:10pm to 5:30pm — Columbian House

NOTES *All Mid-Western Educational Researcher Editorial Board Members should attend.*

Mid-Western Educational Researcher Editorial Board. *Deborah L. Bainer, The Ohio State University - Mansfield; Thomas Andre, Iowa State University; Josue Cruz, University of South Florida; Charlene Czerniak, The University of Toledo; Mary Ann Flowers; Tom Ganser, University of Wisconsin - Whitewater; Kenneth A. Kiewra, University of Nebraska - Lincoln; Gene A. Kramer, American Dental Association; Sharon L. McNeely, Northeastern Illinois University; Isadore Newman, University of Akron; A. William Place, University of Dayton; Richard M. Smith, Rehabilitation Foundation Inc.; Joan T. Timm, University of Wisconsin - Oshkosh; Benjamin Wright, University of Chicago*

T.1610.LH Response to the Virtual University: What are Traditional Institutions to Do?

Division A: Administration; ICPEA — Symposium
Thursday, 4:10pm to 5:30pm — Lake House

CHAIR *Brad Colwell, Southern Illinois University*

NOTES *Special session sponsored by the Illinois Council of Professors of Educational Adminstration.*

PRESENTATION

Response to the Virtual University. *Brad Colwell, Southern Illinois University; Dianne Ashby, Illinois State University; Jeffrey B. Hecht, Illinois State University; Patricia H. Klass, Illinois State University; Cynthia Waltershausen, Western Illinois University*

T.1610.MA Division J Business Meeting

Division J: Postsecondary Education — Meeting
Thursday, 4:10pm to 5:30pm — Mansion House

SR. DIV CHAIR *Margaret A. Simpson, Northwestern University Medical School*

JR. DIV CHAIR *Tom J. Cody, Western Illinois University*

T.1610.SB Perspectives on Supervision

Division A: Administration — Paper Presentation
Thursday, 4:10pm to 5:30pm — Steamboat Hotel

CHAIR *George J. Petersen, Southwest Missouri State University*

PRESENTATIONS

New Teacher Induction. *Gary W. Robinson, Ball State University*

Selected Methods for Making Continuous Improvement a Reality. *Douglas J. Coutts, Indiana Purdue University - Fort Wayne*

T.1610.SP **Policy Issues: What is Driving Education in the '90s**

Division A: Administration — Paper Presentation
Thursday, 4:10pm to 5:30pm — Shakespeare Hotel

CHAIR *Brian R. Hinrichs, Illinois State University*

PRESENTATIONS

Decision Making in the Urbana Public Schools. *Nicole K. Roberts, University of Illinois*

Revisiting School District Demographics As Predictors of School Achievement. *Rich Hofmann, Miami University*

The Establishment Clause and Education: Has the Rhenquist Court Sounded the Death Knell? *Elizabeth T. Lugg, Illinois State University; R. Andrew Lugg, Illinois State University*

The Notion Of School Community And What It Means For Education. *Larry McNeal, Illinois State University*

T.1610.WS **First-Year Teaching**

Division K: Teaching and Teacher Education — Paper Presentation
Thursday, 4:10pm to 5:30pm — Western Stage House

CHAIR *Hema Ramanathan, Butler University*

PRESENTATIONS

A Seven-Year Multivariate Longitudinal Study of the Development of Teachers' Anxiety about Teaching through Preparation and Early Teaching Years. *Ronald N. Marso, Bowling Green State University; Fred L. Pigge, Bowling Green State University*

First Year Teachers: Strangers in Strange Lands. *Edward L. Corley, Miami University*

T.1730.WP **Cracker Barrel Social**

MWERA — Social
Thursday, 5:30pm to 7:00pm — Wolf Point Prefunction Room

HOST *Kim K. Metcalf, Indiana University*

NOTES *A lite fare get together for all MWERA-98 attendees. Everyone is welcome to attend!*

T.1800.ME **Division K Business Meeting**

Division K: Teaching and Teacher Education — Meeting
Thursday, 6:00pm to 7:00pm — Merchants Hotel

SR. DIV CHAIR *Connie L. Bowman, University of Dayton*

JR. DIV CHAIR *Maria Elena Galvez-Martin, The Ohio State University at Lima*

1303

Chronological Listing of Sessions

Friday, October 16, 1998

F.0800.AH Reorganizing the Curriculum

Division B: Curriculum Studies — Paper Presentation
Friday, 8:00am to 9:20am — American House

CHAIR *Nancy G. Saunders, Ball State University*
DISCUSSANT *Laurie Thomas, Ball State University*
PRESENTATIONS

Developing and Teaching Interdisciplinary Curricula: Preparing Preservice Teachers for Multicultural Middle Schools. *Rose Mary Scott, University of Wisconsin - Parkside*

Re-Examination of Classroom Rules. *Bobby G. Malone, Ball State University; Cheryl L. Tietjens, Ball State University*

Sequencing in Literature Instruction. *Guoping Ma, Department of Instructional Systems Technology, In*

F.0800.BH Educational Reform: Urban Education, Teacher Development and Effectiveness, and Organizational Theory

Division H: School Evaluation and Program Development — Paper Presentation
Friday, 8:00am to 9:20am — The Bull's Head

CHAIR *Isadore Newman, University of Akron*
DISCUSSANT *Sharon A. Valente, Ashland University*
PRESENTATIONS

Examining Systemic Educational Reform in Ohio from Diverse Perspectives: Ramifications for State-Wide Reform of Public Education. *William E. Loadman, The Ohio State University; LeAnn Derby, The Ohio State University; Francine E. Michel, The Ohio State University; Joyce C. Miller, The Ohio State University; Anna Marie M. Thomas, The Ohio State University*

Teachers and Principals Respond: School Staff Perceptions about Ohio's Venture Capital Restructuring Effort. *Anna Marie M. Thomas, The Ohio State University*

Using Locally Developed Indicators of Success to Drive School Reform. *Joyce C. Miller, The Ohio State University; LeAnn Derby, The Ohio State University; Francine E. Michel, The Ohio State University; Anna Marie M. Thomas, The Ohio State University*

F.0800.CH Constructing and Analyzing Ordered Response Survey Data

Division I: Education in the Professions — Alternative Format
Friday, 8:00am to 9:20am — Columbian House

CHAIR *Gene A. Kramer, American Dental Association*
NOTES *The objective of this alternative session is to provide graduate students and junior faculty with an opportunity to develop skills in designing and analyzing ordered response survey/questionnaire instruments. The session will be based on the Rasch rating scale model as an analytic tool and the design implications that this tool necessitates. The importance of theoretical models of the underlying construct in item design will demonstrated. The format of this session will be instructional in nature. The presenters will discuss the theory related to the design and analysis of survey data and use a common example to illustrate the important points. This example is based on a 78 item questionnaire that was designed to measure the health of elementary school partnerships. Each presenter will have 30 minutes to present each topic. Following each topic there will be time for a discussion of the topic by the participants.*
PRESENTATIONS

Constructing and Analyzing Ordered Response Survey Data. *Richard M. Smith, Rehabilitation Foundation Inc.; Deborah L. Bainer, The Ohio State University - Mansfield*

F.0800.IH Division G Business Meeting

Division G: Social Context of Education — Meeting
Friday, 8:00am to 9:20am — Lake House

SR. DIV CHAIR *Mary Ann Wham, University of Wisconsin - Whitewater*
JR. DIV CHAIR *Susan J. Lenski, Illinois State University*

F.0800.MA Division C Business Meeting

Division C: Learning and Instruction — Meeting
Friday, 8:00am to 9:20am — Mansion House
SR. DIV CHAIR *M Cecil Smith, Northern Illinois University*
JR. DIV CHAIR *Thomas L. Pourchot, Northern Illinois University*

F.0800.SB This, Too, Shall Pass: A Symposium for Doctoral Students

Division A: Administration — Symposium
Friday, 8:00am to 9:20am — Steamboat Hotel
CHAIR *Thomas Oldenski, University of Dayton*
PRESENTATION
Coping Strategies for Doctoral Students. *Kaetlyn Lad, Texas A&M University at Corpus Christi; George J. Petersen, Southwest Missouri State University; William L. Sharp, Southern Illinois University at Carbondale; James K. Walter, Texas A&M University at Corpus Christi*

F.0800.SP Student Teaching

Division K: Teaching and Teacher Education — Paper Presentation
Friday, 8:00am to 9:20am — Shakespeare Hotel
CHAIR *James A. Salzman, Ursuline College*
DISCUSSANT *James A. Salzman, Ursuline College*
PRESENTATIONS
A Comparison of Special Education Student Teaching Handbooks With CEC Standards for Practicum Experiences. *Daryl J. Wilcox, Wayne State College; Stanley E. Wigle, University of Tennessee - Martin*
Student Teaching: How Stressful Is It? *Elizabeth A. Wilkins-Canter, Rush University; Audrey T. Edwards, Eastern Illinois University; Kenny O. McDougle, Pittsburg State University; Hema Ramanathan, Butler University; Alice Young, Morehead State University*

F.0800.WS Action Research

Division K: Teaching and Teacher Education — Symposium
Friday, 8:00am to 9:20am — Western Stage House
CHAIR *Jennifer J. Fager, Western Michigan University*
PRESENTATION
Action Research in Undergraduate Teacher Education: A Professional Disposition. *Jennifer J. Fager, Western Michigan University; Allison J. Young, Western Michigan University*

F.0930.SE Business Meeting

MWERA — Meeting
Friday, 9:30am to 10:20am — Sauganash Ballroom East
PRESIDENT *Kim K. Metcalf, Indiana University*

F.1030.AH Promising Research in Elementary Education

Division C: Learning and Instruction — Paper Presentation
Friday, 10:30am to 11:50am — American House
CHAIR *Mary Ann Wham, University of Wisconsin - Whitewater*
DISCUSSANT *Pamela R. Clinkenbeard, University of Wisconsin - Whitewater*
PRESENTATIONS
Assessment Practices of Elementary Teachers. *Leah D. Adams, Eastern Michigan University; Bess Kypros, Madonna University; Shannon McNair, Oakland University*
Is There Anything But a Problem? Classroom Research in Middle School Problem-Based Learning. *Sara M. Sage, Indiana University South Bend; Michele Micetich, Illinois Mathematics and Science Academy; Louise Robb, Barrington Middle School*
Parent Perspectives on the Roles of Teacher and Student in the Elementary Classroom. *Marianne M. Hawks, Indiana University*
Results of Using Writing Tasks to Enhance Fourth-Grade Children's Acquisition of Fraction Knowledge. *Janet M. Sharp, Iowa State University*

F.1030.HH **Evaluation of the Cleveland Choice Program**

Division H: School Evaluation and Program Development — Symposium
Friday, 10:30am to 11:50am — The Bull's Head

CHAIR *Kim Metcalf, Indiana University*
PRESENTATIONS

Evaluation of the Cleveland Choice Program: Lessons for Educational Policy and Evaluation. *Kim K. Metcalf, Indiana University; William Boone, Indiana University; Todd L. Chilton, Indiana University; Patty Muller, Indiana University; Francis Rogers, Ohio Department of Education*

F.1030.CH **Division D Business Meeting**

Division D: Measurement and Research Methodology — Meeting
Friday, 10:30am to 11:50am — Columbian House

SR. DIV CHAIR *James J. McCluskey, Central Michigan University*
JR. DIV CHAIR *Larry Henriksen, Ball State University*

F.1030.LH **Educating Asian-American Students: Trends and Issues**

Division E: Counseling and Human Development — Invited Address
Friday, 10:30am to 11:50am — Lake House

CHAIR *Eddie E. Glenn, Illinois State University*
PRESENTATION

Educating Asian-American Students: Trends and Issues. *Ming-Gon John Lian, Illinois State University*

F.1030.MA **Division A Business Meeting**

Division A: Administration — Meeting
Friday, 10:30am to 11:50am — Mansion House

SR. DIV CHAIR *James K. Walter, Texas A&M University at Corpus Christi*
JR. DIV CHAIR *Larry McNeal, Illinois State University*

F.1030.SB **Teacher Knowledge**

Division K: Teaching and Teacher Education — Paper Presentation
Friday, 10:30am to 11:50am — Steamboat Hotel

CHAIR *Marcia M. Ferreira, Wayne State University*
DISCUSSANT *Doug A. Feldmann, Indiana University*
PRESENTATIONS

Characteristics of Constructivist Teachers. *Susan J. Lenski, Illinois State University; Mary Ann Wham, University of Wisconsin - Whitewater*

Teacher-Researchers: One Year Later. *James A. Salzman, Ursuline College; Donna Snodgrass, South Euclid/Lyndhurst Schools*

Toward a Professional Discourse Community. *Robert S. Burroughs, University of Cincinnati; Martha Hendricks-Lee, University of Cincinnati; Tammy Roe, University of Cincinnati*

F.1030.SP **Career Paths: Navigating the Quagmire**

Division J: Postsecondary Education — Paper Presentation
Friday, 10:30am to 11:50am — Shakespeare Hotel

CHAIR *Charles Kline, Purdue University*
DISCUSSANT *Tom J. Cody, Western Illinois University*
PRESENTATIONS

Classroom Assessment in Postsecondary Education. *Susan M. Brookhart, Duquesne University*

The Influence of a Senior Faculty and Junior Faculty Mentoring Program on Teaching. *Michael J. Siegel, Indiana University; John Hayek, Indiana University*

Writing Support Group: An Avenue to Seeking Promotion and Tenure. *Shauna M. Adams, University of Dayton; Connie L. Bowman, University of Dayton; Laurice Joseph, University of Dayton; Katie Kinnucan-Welsch, University of Dayton; Mary Ellen Seery, Univesity of Dayton*

1306

F.1030.WS Problem-Based Learning

Division K: Teaching and Teacher Education — Symposium
Friday, 10:30am to 11:50am — Western Stage House

CHAIR *Dennis J. Kirchen, Dominican University*
PRESENTATION

Problem-Based Learning: Recommendations from Research in Diverse Domains. *Jean W. Pierce, Northern Illinois University; Jolie Burns, Northern Illinois University; Kenneth Eineke, Northern Illinois University; Janet Pariza, Northern Illinois University; Brunnehilde Rapoo, Northern Illinois University*

F.1200.SW Luncheon Address

MWERA — Invited Address
Friday, 12:00pm to 1:30pm — Sauganash Ballroom West

CHAIR *Jeffrey B. Hecht, Illinois State University*
NOTES *Luncheon registration and ticket required for entrance.*
PRESENTATION

The Academic Career in the 21st Century: New Options for Faculty.
Judith M. Gappa, Purdue University

The academic career in the later 20th and early 21st century is changing, in response to both internal and external pressures. The decentralization of colleges and universities, changing workloads, and issues surrounding achieving balance in personal and professional lives are making the professorate a much different occupation that it once was. One of the most notable changes has been that today less than 50% of faculty occupy tenure-track positions (with 26% of all full-time faculty occupying non-tenurable positions). Judith Gappa will investigate these pressures, and how universities are responding to them with both modifications to the traditional system of tenure and outright alternatives to tenure, in her Luncheon Address and Follow-Up Discussion. She will discuss stopping the clock, post-tenure review, and retirement incentive plans that are affecting tenure-track faculty. Gappa will also present other models of full-time non-tenurable appointment, and the features of these alternative employment arrangements that might make them viable career options for many people. Faculty at all stages of their careers, including graduate students and new career faculty, will want to attend to consider the changing nature of the profession and hear Gappa's predictions for the next decade (and beyond) in higher education.

Judith M. Gappa is a Professor of Educational Administration at Purdue University. She is a graduate of the Institute for Educational Management of Harvard University, after earning an Ed.D. in Educational Administration from Utah State University. Gappa spent two years as a Senior Associate in the Washington, D.C. office of American Association of Higher Education conducting research on a variety of topics including changing faculty roles and responsibilities. Prior to that she served as an Affirmative Action/Equal Opportunity Programs Director at Utah State University and an Associate Vice President for Faculty Affairs at San Francisco State University. She is the author of over 28 books, monographs, articles, and research reports; is a member of several editorial boards and higher education associates, and a frequent presenter and speaker at local, state, and national meetings.

F.1340.AH Tricks of the Teaching Statistics Trade

Division D: Measurement and Research Methodology — Workshop
Friday, 1:40pm to 4:00pm — American House

CHAIR *Dennis W. Leitner, Southern Illinois University at Carbondale*
NOTES *Maximum Enrollment: **30**; Fee: **$10.00**; Pre-registration required, on-site registration only if space available.*

F.1340.BH Examining Technology Uses in Schools

Division C: Learning and Instruction — Paper Presentation
Friday, 1:40pm to 3:00pm — The Bull's Head

CHAIR *Jay R. Price, University of Wisconsin - Stevens Point*
DISCUSSANT *Margaret Bailey, Northern Illinois University*
PRESENTATIONS

Big is Better: Multimedia in Kindergarten. *James W. Reineke, Winona State University*
Problems, Prospects, and Possibilities for Literacy Education and the Internet. *Doug A. Feldmann, Indiana University*
The "It Won't Let Me" Phenomenon: An Ethnomethodological Study of Students Blaming Computers. *Vanessa P. Dennen, Indiana University*

1307

F.1340.CH A View of the Modern Superintendency: Success or Failure

Division A: Administration — Paper Presentation
Friday, 1:40pm to 3:00pm — Columbian House

CHAIR *Kaetlyn Lad, Texas A&M University at Corpus Christi*

PRESENTATIONS

A Three State Examination of School Board Evaluation of Superintendents: Assessment or Assassination. *James K. Walter, Texas A&M University at Corpus Christi; George J. Petersen, Southwest Missouri State University; William L. Sharp, Southern Illinois University at Carbondale*

Perceived Effects of Living in the School District Where One is Superintendent. *Norman L. Sommers, Ashland University; George Bowdouris, Ashland University*

Perceptions of School Superintendents on Their Own Success. *William L. Sharp, Southern Illinois University at Carbondale; James K. Walter, Texas A&M University at Corpus Christi*

Superintendent Experiences Using Construction Management in Indiana. *Theodore J. Kowalski, Ball State University; John T. Coopman, Eastbrook Community Schools*

F.1340.LH Follow-up Discussion from the Luncheon Address

MWERA — Invited Address
Friday, 1:40pm to 3:00pm — Lake House

PRESENTATION

Follow-up Discussion to the Luncheon Address: "The Academic Career in the 21st Century: New Options for Faculty". *Judith M. Gappa, Purdue University*

F.1340.MA Division H Business Meeting

Division H: School Evaluation and Program Development — Meeting
Friday, 1:40pm to 3:00pm — Mansion House

SR. DIV CHAIR *Isadore Newman, University of Akron*

JR. DIV CHAIR *John W. Fraas, Ashland University*

F.1340.SB Leadership Perspectives

Division A: Administration — Symposium
Friday, 1:40pm to 3:00pm — Steamboat Hotel

CHAIR *Thomas S. Parish, Kansas State University*

PRESENTATION

The Many Perspective of Leadership: Within M-WERA and Beyond. *Thomas S. Parish, Kansas State University; Kenneth A. Kiewra, University of Nebraska - Lincoln; Gregory J. Marchant, Ball State University; Sharon L. McNeely, Northeastern Illinois University; Kim K. Metcalf, Indiana University*

F.1340.SP Assessment of Cognition and Metacognition

Division C: Learning and Instruction — Paper Presentation
Friday, 1:40pm to 3:00pm — Shakespeare Hotel

CHAIR *Orpha K. Duell, Wichita State University*

DISCUSSANT *Thomas L. Pourchot, Northern Illinois University*

PRESENTATIONS

Dynamic Testing Across Ethnic Groups. *Ronna F. Dillon, Southern Illinois University at Carbondale*

Education in Business: An Application from MAC Tools. *Jennifer A. Wilson, The Ohio State University; William E. Loadman, The Ohio State University*

Enhancing Metacognitive Skills Through Learning Contracts. *Linda H. Chiang, Anderson University*

Examining Epistemological Beliefs Across Domains With a Novel Assessment Approach. *Marlene A. Schommer, Wichita State University*

F.1340.WS Diversity

Division K: Teaching and Teacher Education — Paper Presentation
Friday, 1:40pm to 3:00pm — Western Stage House

CHAIR *Mary Bendixen-Noe, The Ohio State University - Newark*
DISCUSSANT *Carol L. Bentley*
PRESENTATIONS

Preservice Teachers' Learning about Diversity: The Influence of Their Existing Racial Attitudes and Beliefs. *M. A. Garmon, Western Michigan University; Linda M. Anderson, Michigan State University*

The Teaching of Educational Psychology: Comparisons Across Student, Instructor, and Course Variables. *Elizabeth J. Johnson, Governors State University; Bruce R. Ketcher, Governors State University; Stacy D. Saxon, Loyola University Chicago; Penny Shnay, Governors State University*

F.1510.SE Roundtable Discussion/Poster Session #2

MWERA — Roundtable Discussion/Poster
Friday, 3:10pm to 4:00pm — Sauganash Ballroom East

TABLE 1 * Hot Topics Discussion: How Can We Get Students Psyched Up About Educational Psychology? *Daniel Lapsley, Ball State University; Orpha K. Duell, Wichita State University*

TABLE 2 * Hot Topics Discussion: Is Elementary Education Really So Elementary? *Karen Dutt-Doner, University of New England; Richard P. Lipka, Pittsberg State University*

TABLE 3 * Hot Topics Discussion: Who Isn't "At-Risk" of being "At-Risk". *Joycelyn G. Parish, Orkand Corporation; Lisa Johnson, Special Education Resource Center*

TABLE 4 * Hot Topics Discussion: Why do Students do Better in the Classes they Like? *James R. Necessary; Beverly Klecker, Eastern Kentucky University*

TABLE 5 * Hot Topics Discussion: Will Kids ever Measure Up to our Expectations? *John Crawford, Millard Public Schools; John Surber, University of Wisconsin - Milwaukee*

TABLE 6 * Hot Topics Discussion: Will the United States ever be a Truly Bilingual Society? *Sunya T. Collier, Georgia State University; Socorro Herrera, Kansas State University*

TABLE 7 Action Research and Its Impact on a Pre-Service Teacher. *Jay R. Price, University of Wisconsin - Stevens Point*

TABLE 8 An Analysis and Description of Post-Secondary Education Testing Policies of States Within the North Central Association of Colleges and Schools Area. *Burton A. Collins, Governors State University; Larry D. Cross, Governors State University; Ernest E. Gibson, Governors State University; David E. Suddick, Governors State University*

TABLE 9 An Exploration of Traditional and Alternative HIV/AIDS Prevention Outreach. *David E. Victorson, Indiana University; Thomas C. Anderson, Indiana University*

TABLE 10 Becoming a Scientist-Practitioner of Peace Education: Linking Theory and Practice. *Carrie L. Hill, Indiana University; Jonathan Plucker, Indiana University*

TABLE 11 Best Practices Pertaining To Performanced-Based Salary Adjustment Processes. *W. Dene E. Andrews, Indiana State University*

TABLE 12 Configural Frequency Analysis. *Francine E. Michel, The Ohio State University; Joyce C. Miller, The Ohio State University; Sunanta Viragoontavan, The Ohio State University; Kim Yonghee, The Ohio State University*

TABLE 13 Congruence of Teacher and Administrator Self-Efficacy with Professional Development Opportunities. *Scherie E. Lampe, University of Wisconsin - Oshkosh*

TABLE 14 Developing Building Level Technology Mentors. *Susan R. Cramer, COEHS; Steve Rose, COEHS, UW Oshkosh; Henry Winterfeldt, COEHS, UW Oshkosh*

TABLE 15 Service Learning in Teacher and Counselor Education: An Examination of a Collegiate Tri-Level Mentoring Model. *Thomas C. Anderson, Indiana University; Hui Hui Chen, Indiana University; Ana Estevez, Indiana University; Brad Hubbard, Indiana University; Polly Hughes, Indiana University*

TABLE 16 Expressing Their Lives: How College Students Learn to Make Art. *Patricia A. James, University of Minnesota*

TABLE 17 Formative Experiments: A New Methodology of Research. *Susan J. Lenski, Illinois State University*

TABLE 18 New Program Choices in Teacher Education: Student Perspectives. *Shauna M. Adams, University of Dayton; Susan M. Ferguson, University of Dayton*

TABLE 19 The Effects of Note-Construction on Test-Taking. *Andrew D. Katayama, Southern Illinois University at Edwardsville; Steven M. Crooks, Southern Illinois University; Brian L. Dowd, Southern Illinois University; Tammy R. Ramirez, Southern Illinois University*

TABLE 20 The Relationship Between Attachment, Cognitive Complexity, and Empathy in Adulthood. *Todd L. Chilton, Indiana University*

F.1610.AH Factors in the Self-Development of Children

Division E: Counseling and Human Development — Paper Presentation
Friday, 4:10pm to 5:30pm — American House

CHAIR *E. Gabriella Caldwell-Miller, Illinois State University*
PRESENTATIONS

Does Play Make Young Children More Creative? *E. Peter Johnsen, University of Kansas*
Gender Role Traditionality in Students of Intact and Single-Parent Families. *Michael L. Slavkin, Indiana University*
Relation of Gender, Social Support and Self-Efficacy to Science Career Consideration of High School Students. *Soonhwa Yoo, The Ohio State University; Ayres G. D'Costa, The Ohio State University*

F.1610.BH Assessment

Division K: Teaching and Teacher Education — Paper Presentation
Friday, 4:10pm to 5:30pm — The Bull's Head

CHAIR *Mary B. Campbell, St. Xavier University*
DISCUSSANT *Larry Kenney, University of Wisconsin - Whitewater*
PRESENTATIONS

Classroom Assessment Practices of Ohio Teachers. *Craig A. Mertler, Bowling Green State University*
Inservice Teachers' Perceptions of Educational Assessment. *Shawn M. Quilter, Eastern Michigan University; Cher C. Hill, State University of West Georgia*

F.1610.CH Issues in Diversity Education

Division G: Social Context of Education — Paper Presentation
Friday, 4:10pm to 5:30pm — Columbian House

CHAIR *Mary Ann Wham, University of Wisconsin - Whitewater*
DISCUSSANT *Joan T. Timm, University of Wisconsin - Oshkosh*
PRESENTATIONS

A Qualitative Study of African American High School Students Participating in a Precollege Preparatory Program. *JaDora F. Sailes, Indiana University*
Diversity Education for Preservice Teachers: Strategies and Attitude Outcomes. *Karen M. Peterson, Governors State University; Larry D. Cross, Governors State University; Glenna L. Howell, Governors State University; Elizabeth J. Johnson, Governors State University*
Perceptions of Diversity: The Case of Southeastern Louisiana University. *Celina V. Echols, Southeastern Louisiana University*
Socio-Cultural Barriers to Kenyan Girls' Education: Gender Discrimination and Sexual Violence in Secondary Schools. *Kate L. Webster, University of Chicago*

F.1610.LH Comparing Statistical Analytical Tools and Structures in Real-World Data Sets

Division D: Measurement and Research Methodology — Paper Presentation
Friday, 4:10pm to 5:30pm — Lake House

CHAIR *Dimiter M. Dimitrov, Kent State University*
PRESENTATIONS

A Comparison of Radical Basis Function Artificial Neural Networks with Multiple Regression. *John C. Duncan, Kent State University*
A Comparison of Seven Robust Estimators of Location Using Real Data Sets. *Lori F. Rothenberg, Wayne State University; Shlomo S. Sawilowsky, Wayne State University*
Methods of Stastical Analysis of Standardized Test Scores. *Patricia D. Erickson, Northeastern Illinois University*
Precision Efficacy Analysis For Regression. *Gordon P. Brooks, Ohio University*

F.1610.MA Division I Business Meeting

Division I: Education in the Professions — Meeting
Friday, 4:10pm to 5:30pm — Mansion House

SR. DIV CHAIR *Gene A. Kramer, American Dental Association*
JR. DIV CHAIR *Richard M. Smith, Rehabilitation Foundation Inc.*

F.1610.SB **Accountability and Responsibility in Evaluation and Assessment**

Division H: School Evaluation and Program Development — Paper Presentation
Friday, 4:10pm to 5:30pm — Steamboat Hotel

CHAIR *Ralph F. Darr, University of Akron*
DISCUSSANT *Janet K. Sheehan-Holt, Northern Illinois University*
PRESENTATIONS

Graphical Representations of Data: Iowa COGAT, Ohio Proficiency, and SB 55. *Donna Snodgrass, South Euclid/Lyndhurst Schools; James A. Salzman, Ursuline College*

Longitudinal Patterns of Schools Success Among Academically High and Low Risk Tenth Graders. *Philip A. Griswold, Ashland University; Jeffrey W. Patterson, Ashland City Schools*

The Relationship Between Humor (Terperament) and Course Evaluation. *Donna R. Waechter, University of Akron; Isadore Newman, University of Akron; Linda J. Rosenkoetter, University of Akron*

The Responsibility of Educational Researchers and Program Evaluators to Make Appropriate Decisions about Type I Error Rates: A Suggested Approach. *Isadore Newman, University of Akron; John W. Fraas, Ashland University*

F.1610.SP **Gender Issues: A Challenge for the New Millenium**

Division A: Administration — Paper Presentation
Friday, 4:10pm to 5:30pm — Shakespeare Hotel

CHAIR *Elizabeth T. Lugg, Illinois State University*
PRESENTATIONS

Barriers and Coping Strategies Identified by Female Superintendents in Indiana. *Theodore J. Kowalski, Ball State University; Judy G. Stouder, Ball State University*

The Silent Voices of Women in Academe, Speak. *Marylyn T. Oldham, Miami University*

F.1610.WS **Instructional Concerns: Education in Flux**

Division A: Administration — Paper Presentation
Friday, 4:10pm to 5:30pm — Western Stage House

CHAIR *R. Andrew Lugg, Illinois State University*
PRESENTATIONS

Computer Use in Schools: Perceptions of Teachers and Administrators. *William L. Sharp, Southern Illinois University at Carbondale*

District CEOs as Instructional Leaders. *George J. Petersen, Southwest Missouri State University*

Student Leadership Style Effectiveness. *Brian R. Hinrichs, Illinois State University*

Teaming in K-12 Schools: How It Affects the Educational Process and Relationships of Students and Staff. *Randall L. Turk, Wichita State University*

F.1900.WP **President's Reception**

MWERA — Social
Friday, 7:00pm to 12:00am — Wolf Point Prefunction Room

HOST *Kim K. Metcalf, Indiana University*
NOTES *Everyone is invited to come and have a good time!*

7:00pm to Midnight
Wolf Point
Prefunction Room

President's Reception

1311

Chronological Listing of Sessions

Saturday, October 17, 1998

S.0800.AH Classroom Management

Division K: Teaching and Teacher Education — Paper Presentation
Saturday, 8:00am to 9:20am — American House

CHAIR *Steven J. Blatt, University of Dayton*
DISCUSSANT *Lenore P. Wineberg, University of Wisconsin - Oshkosh*
PRESENTATIONS
A Five-Styles Teacher Discipline Model. *Daniel R. Tomal, Concordia University*
Teachers' Reflections on Classroom Management. *Sadegul Akbaba, University of Cincinnati; Arif Altun, University of Cincinnati*

S.0800.BH Conference Feedback

MWERA — Meeting
Saturday, 8:00am to 9:20am — The Bull's Head

CHAIR *Jeffrey B. Hecht, Illinois State University*
NOTES *Come and provide feedback about this year's conference, and help to plan next year's meeting!*

S.0800.CH Training Trainers for Technology Integration: Beyond "How To"

MWERA — Workshop
Saturday, 8:00am to 9:20am — Columbian House

CHAIR *Sharon L. McNeely, Northeastern Illinois University*
NOTES *Maximum Enrollment: **10**; Fee: **$10.00**; Pre-registration required, on-site registration only if space available.*

S.0800.LH A Dimension of Studies Involving Measurement of Student Perceptions, Assessment, and Student Knowledge

Division D: Measurement and Research Methodology — Paper Presentation
Saturday, 8:00am to 9:20am — Lake House

CHAIR *Thomas R. O'Neill, American Society of Clinical Pathologists*
PRESENTATIONS
Comparing Two Methods of Eliciting Knowledge Structures in Statistics. *Mark A. Earley, University of Toledo*
Developing a Measurement Instrument to Study Student Perceptions of Good College Teaching from a Cross-Cultural Perspective. *Wang Aimin, Miami University*
Graphic Organizers: An Alternative Objective Item Format for Reading Assessment? *Mark R. Pomplun, University of Kansas; Phillip Rhea, Wichita Public Schools*
Item Analysis: Teaching the Vocabulary. *Bruce G. Rogers, University of Northern Iowa*

S.0800.MA Sources of Stress and Success for Teachers and Professors

Division E: Counseling and Human Development — Symposium
Saturday, 8:00am to 9:20am — Mansion House

CHAIR *E. Gabriella Caldwell-Miller, Illinois State University*
PRESENTATION
Sources of Stress and Success for Teachers and Professors. *Thomas S. Parish, Kansas State University; James J. McCluskey, Central Michigan University; James R. Necessary*

S.0800.ME Evaluating Schedules and Texts

Division B: Curriculum Studies — Paper Presentation
Saturday, 8:00am to 9:20am — Merchants Hotel

CHAIR *Nancy G. Saunders, Ball State University*
DISCUSSANT *James H. Powell, Ball State University*
PRESENTATIONS

Process Portfolios as a Means for Formative and Summative Evaluation of Student Work in Visual Arts. *John H. Walker, Illinois State University*

The Westfield 3 x 5 Plan: A Novel Approach to Alternative Scheduling. *Juan C. Judikis, Ball State University; Bob Brower, Westfield High School; Bobby G. Malone, Ball State University*

What U.S. History Textbooks Fail to Tell Students About Religion and Faith. *Michael H. Romanowski, Ohio Northern University*

S.0800.SP Program Evaluation: Four Practical Examples

Division H: School Evaluation and Program Development — Paper Presentation
Saturday, 8:00am to 9:20am — Shakespeare Hotel

CHAIR *John W. Fraas, Ashland University*
DISCUSSANT *Ralph F. Darr, University of Akron*
PRESENTATIONS

An Evaluation of a High School's Block Schedule. *Gregory J. Marchant, Ball State University; Sharon E. Paulson, Ball State University*

The Impact of A PDS Internship/Student Teaching Program on the Self-Efficacy, Stages of Concern, and Role Perceptions of Preservice Teachers: The Evaluation of a Goals 2000 Program. *Carole Newman, University of Akron; Michelle Lenarz, The University of Akron; Barbara Moss, University of Akron; Isadore Newman, University of Akron*

Transforming Teaching and Learning Through the Technology Teacher Leader Corps. *Judy L. VanVoorhis, Ohio Schoolnet; Sheila J. Ellenberger, Muskingum College; Dorothy J. Erb, Marietta College; Suzy Green, Ohio University*

Using Alumni Satisfaction Information For Continuous Program Improvement. *Darin T. Allen, University of Wisconsin - Madison; Michael J. Subkoviak, University of Wisconsin - Madison; Charlene E. Tortorice, University of Wisconsin - Madison; Craig S. Wells, University of Wisconsin - Madison*

S.0930.ME Presidental Address

MWERA — Invited Address
Saturday, 9:30am to 10:20am — Merchants Hotel

CHAIR *Jeffrey B. Hecht, Illinois State University*
PRESENTATION

Free Market Policies and Public Education: At What (Opportunity) Cost?
Kim K. Metcalf, Indiana University

The issue of school choice, particularly the use of private school tuition vouchers, is among the most contentious issues facing education in the U.S. today. Importantly, public support and political momentum make it likely that more and more states will implement programs which allow parents to use state funds to send their children to the public or private school of their choice. In spite of, or perhaps because of the passion of the debate, both advocates and proponents rely primarily on emotion to support their positions. Largely ignored are previous and on-going studies which provide insight into the likely effects of public-private voucher programs. It is this knowledge base and its implications for the future not only of voucher programs, but for public education as well that will be considered. Kim Metcalf will investigate the implications of vouchers, and provide some insights from his current work on the Cleveland Scholarship Program.

Kim Metcalf is an Associate Professor of Curriculum and Instruction in the School of Education at Indiana University. He currently serves as the Director of the Indiana Center for Evaluation. Metcalf is a 1989 graduate of The Ohio State University, where he received his Ph.D. in Teacher Education and Educational Research and Evaluation. Metcalf's work has focused on the relationship between instructional/classroom practices and desirable student outcomes, and on the use of alternative and simulated experiences in the professional development of teachers. His work has appeared in a variety of professional and scholarly journals and has been honored by several scholarly associations, among them The Ohio State University and the Association of Teacher Educators. He is also a co-author of the chapter "Training within Teacher Education" in the Handbook of Research on Teacher Education and The Act of Teaching. Metcalf currently leads a team of researchers conducting a broad scale evaluation of the highly contentious Cleveland Scholarship (Voucher) Program.

S.1030.AH Reading, Writing and Arithmetic: Analyzing Proficiency, Ability and Cognitive Styles

Division D: Measurement and Research Methodology — Paper Presentation
Saturday, 10:30am to 11:50am — American House

PRESENTATIONS

Analysis of Growth Rates in Longitudinal Designs: Are Multiple Waves of Data Preferred? *Susan G. Locke, Northern Illinois University; Janet K. Sheehan-Holt, Northern Illinois University*

Partial Credit Analysis of Mathematics Items from the Ohio Off-Grade Proficiency Tests. *Dimiter M. Dimitrov, Kent State University*

Relating Essay Scores and Cognitive Style of the Reader. *Clinton I. Chase, Indiana University*

Using IRT Created Models of Ability in Standard Setting. *June E. Smith, University of Nebraska; James C. Impara, University of NE - Lincoln, Ed. Psych Dept.; Barbara S. Plake, University of NE - Lincoln, Ed. Psych Dept.*

S.1030.BH Conference Planning

MWERA — Meeting
Saturday, 10:30am to 11:50am — The Bull's Head

CHAIR *E. Jane Williams, The Ohio State University*
NOTES *Come and help plan next year's conference. All division chairs for the 1999 conference should attend.*

S.1030.CH The Impact of Curricular Change on Students' Thinking

Division B: Curriculum Studies — Paper Presentation
Saturday, 10:30am to 11:50am — Columbian House

CHAIR *Brad E. Oliver, Ball State University*

PRESENTATIONS

Common Experiences in a Human Environment as a Source for the Dialogical Classroom. *William L. Chandler, University of Wisconsin - Whitewater; Mike Nelson, University of Wisconsin-Whitewater*

Evaluating Supplemental Program Implementation Through Measurements of Students' Critical Thinking Skills and Writing Ability. *David W. Moffett, Indiana University*

The Impact of Curriculum Change on Students' Learning and Their Career Preference. *Wang Aimin, Miami University; Michael Eckert, Miami University*

S.1030.LH Learning Environments and Instructional Practices in Postsecondary Education

Division J: Postsecondary Education — Paper Presentation
Saturday, 10:30am to 11:50am — Lake House

CHAIR *Juan C. Judikis, Ball State University*
DISCUSSANT *Jacqueline C. Rickman, Western Illinois University*

PRESENTATIONS

Examining the Educational Outcomes of Preservice Teachers. *Lemuel W. Watson, Illinois State University*

Predicting the Social Commitments of College Students: An Individual Difference Perspective. *Ellen Lavelle, University of South Dakota*

The Symphony of Change: Harmony or Discord in a College of Education. *Christine K. Sorensen, Northern Illinois University; Nina Dorsch, Northern Illinois University; Cheryl Kish, Northern Illinois University; Alfonzo Thurman, Northern Illinois University; Donna L. Wiseman, Northern Illinois University*

S.1030.MA Teacher Preparation and Development

Division C: Learning and Instruction — Paper Presentation
Saturday, 10:30am to 11:50am — Mansion House

CHAIR *Sharon Pyke*
DISCUSSANT *James W. Reineke, Winona State University*

PRESENTATIONS

Classroom-Based Narratives: Teachers Reflecting on Their Own Teaching Stories. *Ana G. Serafin, Northeastern Illinois University; Ernestine Riggs, North Central Regional Educational Laboratory*

Correlates of a New Measure of Ames' TARGET Model with Aspects of Collaborative Learning. *William J. Gnagey, Illinois State University; Sue Peters, Illinois State University*

Pre-service Teachers' Classroom Assessment Practices: An Investigation into the Factor(s) that Contribute(s) to the Discrepancy Between Measurement Instruction and its Practical Implementation. *Cynthia S. Campbell, Southern Illinois University at Carbondale*

Teaching Educational Psychology: A Report on the Results of an Ongoing Research Project. *Ronald R. Morgan, Loyola University of Chicago; Clare Coco, Loyola University of Chicago; Elizabeth J. Johnson, Governors State University; Stacy D. Saxon, Loyola University Chicago*

S.1030.MI Issues Impacting Education: Which is the Cart and Which is the Horse?

Division A: Administration — Paper Presentation
Saturday, 10:30am to 11:50am — Merchants Hotel

CHAIR *A. William Place, University of Dayton*

PRESENTATIONS

Educational Administrative and Governmental Leadership Regarding Collaboration and Satisfaction with an Alternative Educational Environment. *Eugene T. Sanders, Bowling Green State University; Thomas Christie, Bowling Green State University; Brenda Kallio, Bowling Green State University*

Parental Voices: Circular Hopelessness. *Celeste M. Baldwin, Bowling Green State University; Judith Jackson, Bowling Green State University*

Substance Abuse Policies in Ohio Schools. *William R. Hughes, Ashland University*

S.1030.SB Media and Technology

Division K: Teaching and Teacher Education — Paper Presentation
Saturday, 10:30am to 11:50am — Steamboat Hotel

CHAIR *Carmen Giebelhaus, Ohio Department of Education*

PRESENTATIONS

Videotape: A Tool for Critical Inquiry and Experimentation. *Sunya T. Collier, Georgia State University*

Web-based Case Studies: Infusing Technology into Teacher Education. *Sean J. Smith, Bowling Green State University*

S.1030.SP Investigations in Educational History

Division F: History and Historiography — Paper Presentation
Saturday, 10:30am to 11:50am — Shakespeare Hotel

CHAIR *Louise E. Fleming, Ashland University*

DISCUSSANT *Louise E. Fleming, Ashland University*

PRESENTATIONS

A Unique Institution for a Unique Population: The Finlandssvensk and the Folk High School. *Katherine M. Brown, Loyola University of Chicago*

Julius Rosenwald and the University of Chicago: Portrait of a Trustee. *Peter M. Ascoli, Spertus Institute of Jewish Studies*

The Academic Career of Thomas J. "Stonewall" Jackson. *Kenny O. McDougle, Pittsburg State University*

Cross-Index to Session Sponsors

Division A: Administration

T.0800.LH / The Evolving Roles of the Modern Principal
T.1030.LH / New Trends in Administrator Preparation Programs
T.1340.AH / School Violence and Adolescent Suicide
T.1340.LH / Should Administrators be 'Virtually' Prepared? Developments in Educational Administration
T.1510.LH / Illinois Council of Professors of Educational Administration Business Meeting
T.1610.LH / Response to the Virtual University: What are Traditional Institutions to Do?
T.1610.SB / Perspectives on Supervision
T.1610.SP / Policy Issues: What is Driving Education in the '90s
F.0800.SB / This, Too, Shall Pass: A Symposium for Doctoral Students
F.1030.MA / Division A Business Meeting
F.1340.CH / A View of the Modern Superintendency: Success or Failure
F.1340.SB / Leadership Perspectives
F.1610.SP / Gender Issues: A Challenge for the New Millenium
F.1610.WS / Instructional Concerns: Education in Flux
S.1030.ME / Issues Impacting Education: Which is the Cart and Which is the Horse?

Division B: Curriculum Studies

T.1030.BH / Technology and its Impact upon Curriculum
T.1340.MA / Division B Business Meeting
F.0800.AH / Reorganizing the Curriculum
S.0800.ME / Evaluating Schedules and Texts
S.1030.CH / The Impact of Curricular Change on Students' Thinking

Division C: Learning and Instruction

T.0800.AH / New Motivation Research in Education
F.0800.MA / Division C Business Meeting
F.1030.AH / Promising Research in Elementary Education
F.1340.BH / Examining Technology Uses in Schools
F.1340.SP / Assessment of Cognition and Metacognition
S.1030.MA / Teacher Preparation and Development

Division D: Measurement and Research Methodology

W.1510.SP / Towards a Better Understanding of Response Aberrance Indices
T.0800.CH / An Examination of Studies Involving Rasch Measurement Techniques and Research Methodology
F.1030.CH / Division D Business Meeting
F.1340.AH / Tricks of the Teaching Statistics Trade
F.1610.LH / Comparing Statistical Analytical Tools and Structures in Real-World Data Sets
S.0800.LH / A Dimension of Studies Involving Measurement of Student Perceptions, Assessment, and Student Knowledge
S.1030.AH / Reading, Writing and Arithmetic: Analyzing Proficiency, Ability and Cognitive Styles

Division E: Counseling and Human Development

T.0800.BH / Professionals and Children with Disabilities
T.1030.CH / Division E Business Meeting
T.1340.SP / A Strategic Program to Build Character and Self-Esteem Among Urban Adolescents
T.1610.AH / Ways to Enhance Students' Self-Concepts
F.1030.LH / Educating Asian-American Students: Trends and Issues
F.1610.AH / Factors in the Self-Development of Children
S.0800.MA / Sources of Stress and Success for Teachers and Professors

Division F: History and Historiography

T.1030.MA / Division F Business Meeting
T.1340.CH / Methods in Educational History Research
S.1030.SP / Investigations in Educational History

Division G: Social Context of Education

T.0800.SB / Examining Pedagogy and Curriculum
F.0800.LH / Division G Business Meeting
F.1610.CH / Issues in Diversity Education

Division H: School Evaluation and Program Development

W.1510.AH / Qualitative-Quantitative Research Methodology: Exploring the Interactive Continuum
T.0800.SP / Professional Development: Suggested Models
F.0800.BH / Educational Reform: Urban Education, Teacher Development and Effectiveness, and Organizational Theory
F.1030.BH / Evaluation of the Cleveland Choice Program
F.1340.MA / Division H Business Meeting
F.1610.SB / Accountability and Responsibility in Evaluation and Assessment
S.0800.SP / Program Evaluation: Four Practical Examples

Division I: Education in the Professions

F.0800.CH / Constructing and Analyzing Ordered Response Survey Data
F.1610.MA / Division I Business Meeting

Division J: Postsecondary Education

T.1340.SB / Engaging the Learner: Technology in Postsecondary Education
T.1610.MA / Division J Business Meeting
F.1030.SP / Career Paths: Navigating the Quagmire
S.1030.LH / Learning Environments and Instructional Practices in Postsecondary Education

Division K: Teaching and Teacher Education

W.1510.LH / Delivering Problem-Based Learning Utilizing a CD-ROM Enhanced, Internet-Based Delivery System
T.0800.WS / Special Education and Inclusion
T.1030.SB / Field Experience Sites
T.1030.WS / Preparing Teachers to use Contextual Teaching and Learning Strategies
T.1340.BH / Teacher Training
T.1340.WS / Mentoring
T.1510.BH / Creating, Training, and Sustaining a Mentor Teacher Program
T.1610.WS / First-Year Teaching
T.1800.ME / Division K Business Meeting
F.0800.SP / Student Teaching
F.0800.WS / Action Research
F.1030.SB / Teacher Knowledge
F.1030.WS / Problem-Based Learning
F.1340.WS / Diversity
F.1610.BH / Assessment
S.0800.AH / Classroom Management
S.1030.SB / Media and Technology

MWERA

W.1510.BH / MWERA Association Council and Officers Orientation
W.2000.SE / Kick-Off Address
W.2130.SE / Welcome Social
T.0930.SE / Keynote Address
T.1030.AH / New Member Welcome
T.1030.SP / Follow-up Discussion from the Keynote Address
T.1200.SE / MWERA Association Council Meeting
T.1510.SE / Roundtable Discussion/Poster Session #1
T.1610.CH / Mid-Western Educational Researcher Editorial Board Meeting
T.1730.WP / Cracker Barrel Social
F.0930.SE / Business Meeting
F.1200.SW / Luncheon Address
F.1340.LH / Follow-up Discussion from the Luncheon Address
F.1510.SE / Roundtable Discussion/Poster Session #2
F.1900.WP / President's Reception
S.0800.BH / Conference Feedback
S.0800.CH / Training Trainers for Technology Integration: Beyond "How To"
S.0930.ME / Presidential Address
S.1030.BH / Conference Planning

Subject Index

Accountability
T.0800.LH, F.1510.SE, F.1610.SB

Achievement
T.0800.AH, F.1510.SE, S.1030.CH

Action Research
F.0800.WS

Adaptive Testing
F.1340.SP

Administration
T.0800.LH, T.1030.LH, T.1340.AH, T.1610.LH, T.1610.SB, F.1340.CH, F.1340.SB, F.1610.SP, F.1610.WS, S.1030.ME

Adult Education/Development
T.1510.SE, S.0800.CH, S.1030.SP

Aging
T.1510.SE

Arts Education
F.1510.SE, S.0800.ME

Asian Education
T.1030.SB, F.1030.LH

Assessment
T.0800.BH, T.1510.SE, F.1030.AH, F.1030.SP, F.1340.CH, F.1510.SE, F.1610.BH, F.1610.SB, S.0800.LH, S.0800.SP, S.1030.MA

At-Risk Students
T.0800.BH, T.0800.SB, T.1340.AH, T.1510.SE, F.1510.SE, F.1610.CH, F.1610.SB, S.1030.ME

Attitude
T.0800.BH, T.0800.WS, T.1340.BH, T.1510.SE, F.1340.SP, F.1610.BH, F.1610.CH

Attribution
T.0800.AH, T.0800.SB

Bilingual/Bicultural
F.1030.LH, F.1510.SE

Black Education
F.1610.CH

Business Education
F.1340.SP

Career Development
T.0800.SB, F.1340.CH, F.1610.AH, F.1610.SP

Case Studies
T.1510.SE, T.1610.SP, T.1610.WS, S.0800.LH, S.1030.MA, S.1030.SP

Certification/Licensure
F.1510.SE

Child Development
F.1510.SE, F.1610.AH

Classroom Management
T.0800.SB, F.0800.AH, S.0800.AH, S.1030.ME

Classroom Research
T.0800.AH, T.1340.SB, T.1510.SE, F.1030.AH, F.1510.SE, S.0800.AH, S.1030.MA

Cognition
F.1340.SP, S.1030.CH

Cognitive Processes/Development
T.1030.WS, T.1510.SE, F.1510.SE

Collaboration
T.0800.SP, T.1030.LH, T.1030.SB, T.1340.BH, T.1510.BH, T.1510.SE, T.1610.SP, F.1030.SB, F.1030.SP, F.1610.WS, S.0800.SP, S.1030.LH

Community Colleges
S.1030.LH

Comparative Education
T.1030.SB, F.1610.CH

Computer Applications
T.1610.SB, F.1340.AH

Computers and Learning
T.1030.BH, T.1340.SB, T.1510.SE, F.1340.BH, F.1610.WS, S.1030.SB

Conceptual Change
T.1510.SE, F.1510.SE

Constructivism
F.1030.SB, F.1030.WS, F.1510.SE

Continuing Education
T.1030.LH

Cooperative Learning
S.1030.MA

Counseling
W.1510.SP, T.0800.BH, F.1510.SE, F.1610.AH

Counselor Training/Supervision
T.1510.SE

Critical Theory
T.1340.CH

Critical Thinking
S.1030.CH, S.1030.SB

Cross-Cultural Studies
T.1510.SE, S.0800.LH

Curriculum
T.1030.BH, F.0800.AH, F.1510.SE, S.1030.CH

Data Analysis
F.1340.AH, F.1610.LH, F.1610.SB

Decision Making
T.1340.CH, T.1610.SP

Demography
T.1610.SP

1317

Dropouts
T.1510.SE
Early Childhood
T.0800.SB, F.1610.AH
Economics of Education
T.0800.SB, S.1030.SP
Educational Policy
W.2000.SE, T.1610.SP, F.1510.SE, S.0800.SP, S.1030.ME
Educational Reform
T.0800.CH, T.0800.LH, T.0800.SP, T.1340.AH, T.1340.BH, T.1510.SE, T.1610.SP, F.0800.BH
Elementary Schools
T.0800.SB, F.1030.AH, F.1510.SE, S.1030.ME
Ethnicity
T.1510.SE, S.1030.SP
Evaluation
T.1510.SE, F.1340.CH, F.1610.SB, S.0800.ME
Facilities
F.1340.CH
Faculty Development
T.0800.SP, T.1510.SE, F.1030.SP, F.1340.WS
Finance
W.2000.SE, T.0800.LH, F.1340.CH
Gender Studies
T.0800.AH, T.1510.SE, F.1610.AH, F.1610.CH, F.1610.SP
High Schools
T.1510.SE, S.0800.ME, S.0800.SP, S.1030.ME
History
T.1340.CH, S.1030.SP
Indicators/Information Systems
T.1610.SB, F.0800.BH
Individual Differences
F.1340.SP
Information Processing
F.1340.SP
Instructional Design/Development
T.1340.SB, F.0800.AH
Instructional Practices
W.1510.LH, T.1030.LH, T.1340.SB, T.1510.SE, F.1340.WS, F.1610.BH, F.1610.CH, F.1610.WS, S.1030.MA
Instructional Technology
W.1510.LH, T.1340.SB, F.0800.AH, F.1340.BH, S.0800.SP
Intelligence
T.1030.LH, F.1340.SP
International Education/Studies
S.1030.SP
Item Response Theory (IRT)
W.1510.SP, T.0800.CH, F.0800.CH, S.1030.AH
Language Comprehension/Development
F.1030.LH
Law/Legal
T.1610.SP
Leadership
T.0800.LH, T.1030.LH, F.1340.SB, F.1610.WS
Learning Environments
T.1510.SE, F.1030.AH, S.1030.LH, S.1030.MA, S.1030.ME
Learning Processes/Strategies
T.1030.BH, T.1030.WS, F.1030.AH, F.1030.WS, F.1510.SE, S.1030.LH
Literacy
T.0800.SP, F.1340.BH, S.1030.CH
Mathematics Education
F.1030.AH
Measurement
T.0800.CH, T.0800.WS, T.1510.SE, F.0800.CH, S.0800.LH, S.1030.AH
Media
T.1510.SE
Medical Education
T.1510.SE
Mentoring
T.1030.LH, T.1340.WS, T.1510.BH, F.1030.SP, S.1030.MA
Metacognition
T.1030.WS, F.1340.SP
Middle Schools
F.0800.AH, F.1030.AH, S.1030.CH
Minorities
F.0800.AH, F.1340.WS, F.1510.SE, S.1030.ME
Moral Education/Development
T.1510.SE, F.1510.SE
Motivation
T.0800.AH, T.1610.AH, F.1030.WS, S.0800.MA
Networking
F.0800.SB
Organization Theory/Change
F.0800.BH, S.1030.LH
Peer Interaction/Friendship
F.0800.SB, F.1610.CH
Performance Assessment
T.0800.CH, F.1030.SB, F.1510.SE, F.1610.SB, S.1030.AH
Politics
W.1510.BH
Postsecondary Education
W.2000.SE, T.0800.SB, T.0800.SP, T.1340.SB, T.1510.SE, F.1030.SP, F.1510.SE, S.0800.ME, S.1030.LH
Principals
T.0800.LH, T.1030.LH
Problem Solving
W.1510.BH, W.1510.LH, T.1030.WS, F.1030.AH
Professional Development
T.0800.SP, T.1030.SB, T.1340.WS, T.1510.SE, T.1610.WS, F.0800.SP, F.1340.SB
Program Evaluation
T.0800.SB, T.1510.SE, F.0800.BH, S.0800.SP
Psychometrics
W.1510.SP, T.0800.CH, S.0800.LH
Qualitative Research
T.1340.CH, T.1340.SB, F.1030.SB, F.1030.SP, F.1340.BH, F.1510.SE, S.0800.ME, S.1030.MA
Race
F.1340.WS, F.1610.CH, F.1610.SP
Reading
F.1510.SE, S.1030.MA
Research Methodology
W.1510.AH, T.0800.CH, F.1510.SE, F.1610.LH, S.1030.AH
Restructuring
T.0800.LH, S.1030.LH
School/Teacher Effectiveness
F.0800.AH, F.0800.BH, F.1340.BH
Science Education
S.1030.CH
Self-Concept
T.0800.WS, T.1610.AH
Social Class
T.1610.SP
Social Context
F.1510.SE
Social Processes/Development
T.0800.SB, T.1510.SE, F.1610.AH, S.0800.MA
Social Studies Education
T.0800.CH, S.0800.ME
Special Education
T.0800.BH, T.0800.WS, T.1510.SE, F.0800.SP
Staff Development
T.0800.LH, T.1610.SB, F.0800.BH, F.1510.SE
Standard Setting
T.0800.WS, F.0800.SP, F.1510.SE, S.1030.AH
Statistics
T.0800.CH, F.1340.AH, F.1610.LH, F.1610.SB, S.0800.LH, S.1030.AH
Stress/Coping
F.0800.SB, F.0800.SP, S.0800.MA
Student Behavior/Attitude
F.1610.CH
Student Cognition
F.1510.SE, S.0800.LH
Student Knowledge
S.0800.LH
Student Teaching
F.0800.SP, S.1030.MA
Supervision
W.1510.BH, T.1510.SE, T.1610.SB
Survey Research
F.0800.CH, S.0800.LH, S.0800.SP
Teacher Assessment
S.1030.LH
Teacher Characteristics
T.1030.SB, T.1610.WS, F.0800.WS, F.1030.SB, F.1030.SP, S.0800.AH
Teacher Cognition
T.1030.WS, F.1510.SE
Teacher Education/Development
T.0800.CH, T.0800.WS, T.1030.SB, T.1030.WS, T.1340.BH, T.1340.WS, T.1510.BH, T.1510.SE, T.1610.WS, F.0800.SP, F.1030.AH, F.1030.SB, F.1340.WS, F.1510.SE, F.1610.BH, S.0800.SP, S.1030.SB
Teacher Knowledge
T.1340.BH, T.1340.CH, F.1030.SB
Teacher Research
T.1340.BH, F.0800.WS, F.1510.SE
Teaching Context
T.1030.SB
Technology
T.1030.BH, T.1340.SB, T.1610.LH, F.1340.BH, F.1510.SE, F.1610.WS, S.0800.CH, S.1030.SB
Test Theory/Development
T.0800.CH
Testing
T.0800.CH, F.1030.AH, S.0800.LH, S.1030.AH

1318

Textbooks
S.0800.ME
Urban Education
F.1610.CH, S.1030.ME
Women's Issues
F.1510.SE, F.1610.CH, F.1610.SP
Writing
F.1030.SB, S.1030.CH

Participant Index

Adams, Leah D. *F.1030.AH*
Adams, Shauna M. *F.1030.SP, F.1510.SE*
Aimin, Wang *S.0800.LH, S.1030.CH*
Akbaba, Sadegul *S.0800.AH*
Albrecht, Robert C. *T.0930.SE, T.1030.SP*
Allen, Darin T. *S.0800.SP*
Altun, Arif *S.0800.AH*
Ament, Darci M. *T.0800.AH*
Anderson, Linda M. *F.1340.WS*
Anderson, Thomas C. *T.1510.SE, F.1510.SE*
Andre, Thomas *T.1510.SE, T.1610.CH*
Andrews, W. Dene E. *F.1510.SE*
Ascoli, Peter M. *S.1030.SP*
Ashby, Dianne *T.0800.LH, T.1610.LH*
Bailey, Margaret *F.1340.BH*
Bainer, Deborah L. *T.1340.WS, T.1610.CH, F.0800.CH*
Baldwin, Celeste M. *S.1030.ME*
Bendixen-Noe, Mary *T.1340.WS, F.1340.WS*
Bennett, Roger V. *T.1030.LH, T.1340.AH*
Bentley, Carol L. *F.1340.WS*
Bercik, Janet T. *T.1510.BH*
Bilowich, Elaine *T.1510.BH*
Blair, Ulrike B. *T.1030.BH*
Blatt, Steven J. *T.1510.SE, S.0800.AH*
Boone, William *F.1030.BH*
Borkowski, John *T.1030.WS*
Bowdouris, George *F.1340.CH*
Bowen, Mack L. *T.0800.BH*
Bowman, Connie L. *T.1800.ME, F.1030.SP*
Boyd, Donald A. *T.1610.AH*
Brady, Peter J. *T.0800.SB*
Breault, Rick A. *T.1030.SB*
Brock, Barbara L. *T.0800.LH, T.1340.WS*
Brookhart, Susan M. *F.1030.SP*
Brooks, Gordon P. *T.1510.SE, F.1610.LH*
Brower, Bob *S.0800.ME*
Brown, Katherine M. *S.1030.SP*
Bugaj, Albert M. *T.1510.SE*
Burns, Jolie *F.1030.WS*
Burroughs, Robert S. *F.1030.SB*
Caldwell-Miller, E. Gabriella *T.1030.CH, T.1610.AH, F.1610.AH*
Campbell, Cynthia S. *S.1030.MA*
Campbell, Mary B. *F.1610.BH*
Chandler, William L. *S.1030.CH*
Chase, Clinton I. *S.1030.AH*
Chen, Hui H. *T.1510.SE*
Chiang, Linda H. *F.1340.SP*
Chilton, Todd L. *F.1030.BH, F.1510.SE*
Christie, Thomas *S.1030.ME*
Clark, Dawn *T.1340.CH*
Clinkenbeard, Pamela R. *F.1030.AH*
Cochran, H. Keit *T.0800.WS*
Coco, Clare *S.1030.MA*
Cody, Tom J. *T.1340.SB, T.1610.MA, F.1030.SP*
Coleman, Marta J. *T.1510.SE*
Collier, Sunya T. *F.1510.SE, S.1030.SB*
Collins, Burton A. *F.1510.SE*
Colwell, Brad *T.1610.LH*
Connor, Kathy R. *T.1340.BH*
Coopman, John T. *F.1340.CH*
Corley, Edward L. *T.1610.WS*
Coutts, Douglas J. *T.1610.SB*
Crader, Allan *W.1510.LH*
Cramer, Susan R. *F.1510.SE*
Crawford, John *F.1510.SE*
Crooks, Steven M. *F.1510.SE*
Cross, Larry D. *T.1340.BH, F.1510.SE, F.1610.CH*
Cruz, Josue *T.1610.CH*
Czerniak, Charlene *T.1610.CH*
D'Costa, Ayres G. *W.1510.SP, T.0800.CH, F.1610.AH*
Darr, Alice *T.0800.SP*
Darr, Ralph F. *F.1610.SB, S.0800.SP*
Davis, Kevin *T.1510.SE*
Davis, Michaeleen *T.1340.SB*
Daytner, Gary T. *T.1510.SE*
De Luca, Barbara M. *T.0800.SB, T.1030.BH*
DeMoulin, Donald F. *T.0800.WS*
Dennen, Vanessa P. *F.1340.BH*
Derby, LeAnn *F.0800.BH*
DiCintio, Matt *T.1510.SE*
Diez, Mary *T.1030.WS*
Dillon, Ronna F. *F.1340.SP*
Dimitrov, Dimiter M. *F.1610.LH, S.1030.AH*
Dorsch, Nina *S.1030.LH*
Dowd, Brian L. *F.1510.SE*
Drechtrah, Mary E. *T.1510.SE*
Dretzke, Beverly J. *T.0800.AH, F.1340.AH*
Duell, Orpha K. *F.1340.SP, F.1510.SE*
Duemer, Lee S. *T.1340.CH*
Duncan, John C. *F.1610.LH*
Duncan, P. Kay *T.1510.SE*
Dunwoody, Bonnie *T.0800.SP*
Dutt-Doner, Karen *F.1510.SE*
Dye, Gloria A. *T.1510.SE*
Earley, Mark A. *S.0800.LH*
Echols, Celina V. *F.1610.CH*
Eckert, Michael *S.1030.CH*
Edwards, Audrey T. *F.0800.SP*
Eineke, Kenneth *F.1030.WS*
Ellenberger, Sheila J. *S.0800.SP*
Erb, Dorothy J. *S.0800.SP*
Erickson, Patricia D. *F.1610.LH*
Estevez, Ana *T.1510.SE*
Fager, Jennifer J. *T.1510.SE, F.0800.WS*
Fallon, Joanne *T.1510.BH*
Feldmann, Doug A. *T.1340.CH, F.1030.SB, F.1340.BH*
Ferguson, Susan M. *F.1510.SE*
Ferreira, Marcia M. *F.1030.SB*
Fleming, Louise E. *T.1030.MA, T.1340.CH, S.1030.SP*
Flowers, Mary A. *T.1610.CH*
Flynn, Judith *T.1510.BH*
Fraas, John W. *F.1340.MA, F.1610.SB, S.0800.SP*
Galvez-Martin, Maria E. *T.1800.ME*
Ganser, Tom *T.1340.WS, T.1610.CH*
Gappa, Judith M. *F.1200.SW, F.1340.LH*
Garmon, M. A. *T.0800.SP, F.1340.WS*
Gee, Sandra *T.1510.SE*
Gibbs, Sandra *T.1030.WS*
Gibson, Ernest E. *F.1510.SE*
Giebelhaus, Carmen *T.1340.WS, S.1030.SB*
Giuntoli, Kathleen *T.1340.BH*
Glenn, Eddie E. *T.0800.BH, T.1030.CH, T.1340.SP, T.1610.AH, F.1030.LH*
Gnagey, William J. *S.1030.MA*
Gordon, Pat *T.0800.SP*
Green, Suzy *S.0800.SP*
Greer, Rodney *T.1340.SB*
Griswold, Philip A. *F.1610.SB*
Guo, Gwo-Jen *T.0800.CH*
Hara, Noriko *T.1340.SB*
Harrington, Robert G. *T.0800.BH*
Hawks, Marianne M. *F.1030.AH*
Hayek, John *F.1030.SP*
Hecht, Jeffrey B. *W.2000.SE, W.2130.SE, T.0930.SE, T.1610.LH, F.1200.SW, S.0800.BH, S.0930.ME*
Hendricks-Lee, Martha *F.1030.SB*
Henriksen, Larry *F.1030.CH*
Herrera, Socorro *F.1510.SE*
Hill, Carrie L. *F.1510.SE*
Hill, Cher C. *T.0800.CH, F.1610.BH*
Hines, Edward *W.2000.SE*
Hinrichs, Brian R. *T.1610.SP, F.1610.WS*
Hofmann, Rich *T.1610.SP*
Holloway, Ken *W.1510.LH*
Holloway, Linda M. *T.1510.SE*
Howell, Glenna L. *T.1340.BH, F.1610.CH*
Hubbard, Brad *T.1510.SE*
Huck, Schuyler W. *F.1340.AH*
Hueth, Alan C. *T.1510.SE*
Hughes, Polly *T.1510.SE*
Hughes, William R. *S.1030.ME*

Hunn, Diana M., *T.1510.SE*
Impara, James C., *S.1030.AH*
Jackson, Judith, *S.4030.ME*
James, Patricia A., *F.1510.SE*
Jason, Martin H., *T.0800.LH*
Johnsen, E. Peter, *F.1610.AH*
Johnson, Beth, *T.1030.MA, T.1340.CH*
Johnson, Elizabeth J., *T.1340.BH, F.1340.WS, F.1610.CH, S.1030.MA*
Johnson, Lisa, *F.1510.SE*
Johnson-Naden, Harriet, *T.1510.BH*
Joseph, Laurice, *F.1030.SP*
Judikis, Juan C., *S.0800.ME, S.1030.LH*
Kallio, Brenda, *S.1030.ME*
Katayama, Andrew D., *F.1510.SE*
Kenney, Larry, *F.1610.BH*
Ketcher, Bruce R., *F.1340.WS*
Kiewra, Kenneth A., *T.1610.CH, F.1340.SB*
Killmer, Nadine M., *T.1340.BH*
Kinnucan-Welsch, Katie, *F.1030.SP*
Kirchen, Dennis J., *F.1030.WS*
Kish, Cheryl, *S.1030.LH*
Klass, Patricia H., *T.1610.LH*
Klecker, Beverly, *F.1510.SE*
Kline, Charles, *F.1030.SP*
Knapp, Thomas R., *T.0800.CH, F.1340.AH*
Kowalski, Theodore J., *F.1340.CH, F.1610.SP*
Kramer, Gene A., *T.1610.CH, F.0800.CH, F.1610.MA*
Kypros, Bess, *F.1030.AH*
Lad, Kaetlyn, *F.0800.SB, F.1340.CH*
Lairson, Sheila F., *T.0800.SB*
Lampe, Scherie E., *F.1510.SE*
Lange, Linda D., *T.0800.AH*
Lapsley, Daniel, *F.1510.SE*
Lavelle, Ellen, *S.1030.LH*
Leitner, Dennis W., *F.1340.AH*
Lenarz, Michelle, *S.0800.SP*
Lenski, Susan J., *T.0800.SB, F.0800.LH, F.1030.SB, F.1510.SE*
Levin, Cheryl J., *T.0800.BH*
Levin, Joel R., *F.1340.AH*
Lian, Ming-Gon J., *F.1030.LH*
Lindoerfer, Patricia, *T.1510.BH*
Lipka, Richard P., *F.1510.SE*
Loadman, William E., *T.0800.CH, F.0800.BH, F.1340.SP*
Locke, Susan G., *S.1030.AH*
Longfield, Judith, *T.1510.SE*
Ludwig, Robert A., *T.1030.LH*
Lugg, Elizabeth T., *T.1610.SP, F.1610.SP*
Lugg, R. Andrew, *T.1610.SP, F.1610.WS*
Lynch, Daniel, *T.1510.SE*
Ma, Guoping, *F.0800.AH*
Malone, Bobby G., *F.0800.AH, S.0800.ME*
Manges, Charles, *T.0800.LH, T.1030.LH*
Marchant, Gregory J., *W.1510.BH, F.1340.SB, S.0800.SP*
Mariage, Troy V., *T.0800.SP*
Marso, Ronald N., *T.1610.WS*
Martin, Barbara N., *T.0800.SB, T.1340.AH*
May, Judy J., *T.1510.SE*
McCluskey, James J., *T.1510.SE, F.1030.CH, S.0800.MA*
McDougle, Kenny O., *F.0800.SP, S.1030.SP*
McNair, Shannon, *F.1030.AH*
McNeal, Larry, *T.0800.LH, T.1610.SP, F.1030.MA*
McNeely, Sharon L., *W.1510.BH, T.1610.CH, F.1340.SB, S.0800.CH*
Merkel, Linda, *T.1510.BH*
Mertler, Craig A., *F.1610.BH*
Metcalf, Kim K., *W.1510.BH, T.1200.SE, T.1730.WP, F.1030.BH, F.0930.SE, F.1340.SB, F.1900.WP, S.0930.ME*
Meyer, Rhonda, *T.1510.SE*
Micetich, Michele, *F.1030.AH*
Michel, Francine E., *F.0800.BH, F.1510.SE*
Miller, Joyce C., *F.0800.BH, F.1510.SE*
Moffett, David W., *S.1070.CH*
Morgan, Ronald R., *T.0800.BH, S.1030.MA*
Moss, Barbara, *W.1510.AH, S.0800.SP*
Muller, Patty, *F.1030.BH*
Necessary, James R., *F.1510.SE, S.0800.MA*
Nelson, Mike, *S.1030.CH*
Newman, Carole, *T.0800.SP, T.1030.SB, S.0800.SP*
Newman, Isadore, *W.1510.AH, T.1610.CH, F.0800.BH, F.1340.MA, F.1610.SB, S.0800.SP*
Nichols, Joe D., *T.1030.SB*
O'Connor, Richele, *T.0800.WS, T.1510.SE*
O'Neill, Thomas R., *S.0800.LH*
Oldenski, Thomas, *F.0800.SB*
Oldham, Marylyn T., *F.1610.SP*
Oliver, Brad E., *T.1030.BH, S.1030.CH*
Parish, Joycelyn G., *F.1510.SE, T.1610.AH*
Parish, Thomas S., *T.1610.AH, F.1340.SB, S.0800.MA*
Pariza, Janet, *F.1030.WS*
Patterson, Jeffrey W., *F.1610.SB*
Paulson, Sharon E., *S.0800.SP*
Peters, Sue, *S.1030.MA*
Petersen, George J., *T.1340.AH, T.1610.SB, F.0800.SB, F.1340.CH, F.1610.WS*
Peterson, Karen M., *T.1340.BH, F.1610.CH*
Pickering, Thomas, *T.1510.SE*
Pierce, Jean W., *T.1030.WS, F.1030.WS*
Pigge, Fred L., *T.1610.WS*
Place, A. William, *T.1610.CH, S.1030.ME*
Plake, Barbara S., *S.1030.AH*
Plucker, Jonathan, *F.1510.SE*
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Call for Editors

Mid-Western Educational Researcher

Journal of the Mid-Western Educational Research Association

Proposals are currently being sought for the Editorship of the *Mid-Western Educational Researcher*. The *Researcher* is the quarterly publication of the Mid-Western Educational Research Association, with the summer issue of each year serving as the annual meeting program. The journal serves the dual function of providing MWERA members with timely information about the organization and of providing a vehicle for dissemination of scholarly work in education or education related fields. This dual mission reflects the growth and change of the organization itself in recent years.

The three-year appointment of the current editorial team will expire in October, 1999. The appointment of the next editor or editorial team will be from October, 1999 through October, 2002. However, it is anticipated that selection of the new editorial staff will be made in sufficient time to allow the new staff to work with the existing staff during much of the 1998-99 year. Proposals are sought from individuals and teams interested in assuming responsibility for the operation and direction of the *Researcher* for a three-year period. The format for proposals is open, but each proposal should include at least the following:

(1) Name, institutional affiliation, address, telephone and FAX numbers, and e-mail address of each member of the proposed editorial team;
(2) A vision statement indicating the editorial team's intended goals for the journal, and an explanation of how this vision reflects the membership, perspectives, and direction of MWERA;
(3) A proposed plan for promoting this vision; and
(4) An explanation of the expertise and qualifications of the editorial team which are likely to encourage the continued improvement and development of the *Researcher*.

Proposals should be submitted, no later than October 1, 1998, to the President of MWERA, Dr. Kim Metcalf, at:

Dr. Kim Metcalf, Director
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2805 East 10th Street
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Questions may be directed to Ms. Rebecca Gross, Administrative Assistant, at (812) 855-4438, FAX (812) 856-5890, or e-mail: iuice@indiana.edu.

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1329

Conference At-A-Glance

Time	American House	Columbian House	Lake House	Mansion House	Merchants Hotel	Sauganash East	Sauganash West	Shakespeare Hotel	Steamboat Hotel	The Bull's Head	Western Stage House	Wolf Point Prefunction
Wednesday												
3:10pm	Div H Workshop		Div K Workshop					Div D Workshop		MWERA Workshop		
8:00pm						MWERA Kick-Off						
9:30pm						MWERA Social						
Thursday												
8:00am	Div C Paper	Div D Paper	Div A Paper					Div H Paper	Div G Paper	Div E Paper	Div K Paper	
9:30am						MWERA Keynote						
10:30am	MWERA Meeting	Div E Meeting	Div A Paper	Div F Meeting				MWERA Follow-Up	Div K Paper	Div B Paper	Div K Symposium	
Noon						MWERA Council						
1:40pm	Div A Symposium	Div F Paper	Div A Symposium	Div B Meeting				Div E Invited	Div J Paper	Div K Paper	Div K Symposium	
3:10pm			ICPEA Meeting			MWERA Roundtables				Div K Workshop		
4:10pm	Div E Symposium	MWERA Meeting	Div A Symposium	Div J Meeting				Div A Paper	Div A Paper		Div K Paper	
5:30pm												Cracker Barrel
6:00pm					Div K Meeting							
Friday												
8:00am	Div E Paper	Div I Alternative	Div G Meeting	Div C Meeting				Div K Paper	Div A Symposium	Div B Paper	Div K Symposium	
9:30am						MWERA Business Mtg						
10:30am	Div C Paper	Div D Meeting	Div E Invited	Div A Meeting				Div J Paper	Div K Paper	Div H Symposium	Div K Symposium	
Noon							MWERA Luncheon					
1:40pm	Div D Workshop	Div A Paper	MWERA Follow-Up	Div H Meeting				Div C Paper	Div A Symposium	Div C Paper	Div K Paper	
3:10pm						MWERA Roundtables						
4:10pm	Div E Paper	Div G Paper	Div D Paper	Div I Meeting				Div A Paper	Div H Paper	Div K Paper	Div A Paper	
7:00pm												Presidential Reception
Saturday												
8:00am	Div K Paper	MWERA Workshop	Div D Paper	Div E Symposium	Div B Paper			Div H Paper		MWERA Feedback		
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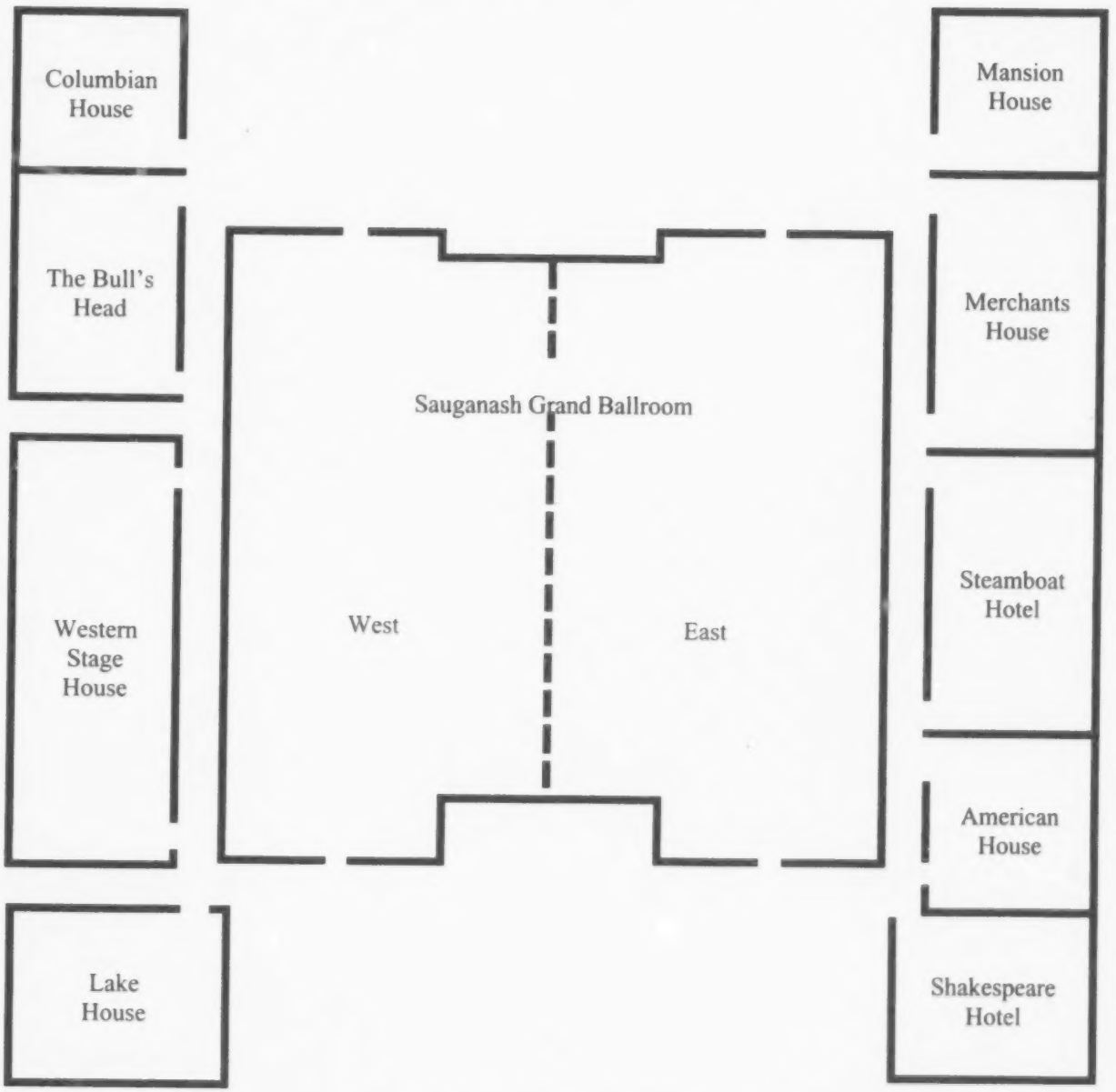

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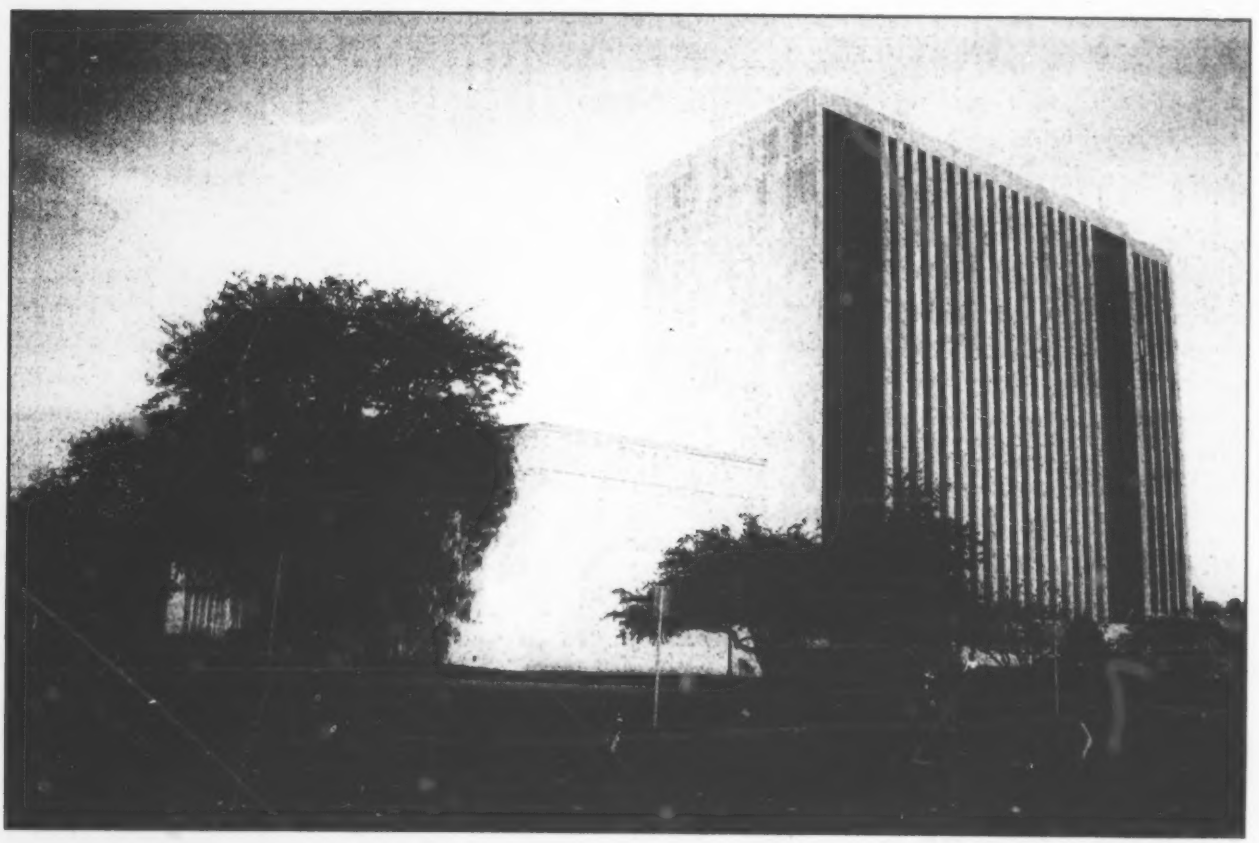

Teachers College, Ball State University

Special Issue—Internet in the Classroom

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Teachers College, Ball State University, is accredited by the National Council for the Accreditation of Teacher Education (NCATE) and is a member of The New Holmes Partnership. The College is committed to demonstrating excellence in P-12 education, and to preparing outstanding professional educators and human service providers, supporting their induction and continuing education, promoting research and development in their fields, and influencing policy to enhance their efforts.

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The *Mid-Western Educational Researcher* accepts research-based manuscripts that would appeal to a wide range of readers. All materials submitted for publication must conform to the language, style, and format of the *Publication Manual of the American Psychological Association*, 4th ed., 1994 (available from Order Department, American Psychological Association, P.O. Box 2710, Hyattsville, MD 20784).

Four copies of the manuscript should be submitted typed double-spaced (including quotations and references) on 8½ x 11 paper. Only words to be italicized should be underlined. Abbreviations and acronyms should be spelled out when first mentioned. Pages should be numbered consecutively, beginning with the page after the title page. Manuscripts should be less than 20 pages long. An abstract of less than 100 words should accompany the manuscript.

The manuscript will receive blind review from at least two professionals with expertise in the area of the manuscript. The author's name, affiliation, mailing address, telephone number, e-mail address (if available), should appear on the title page only. Efforts will be made to keep the review process to less than four months. The editors reserve the right to make minor changes in order to produce a concise and clear article. The authors will be consulted if any major changes are necessary.

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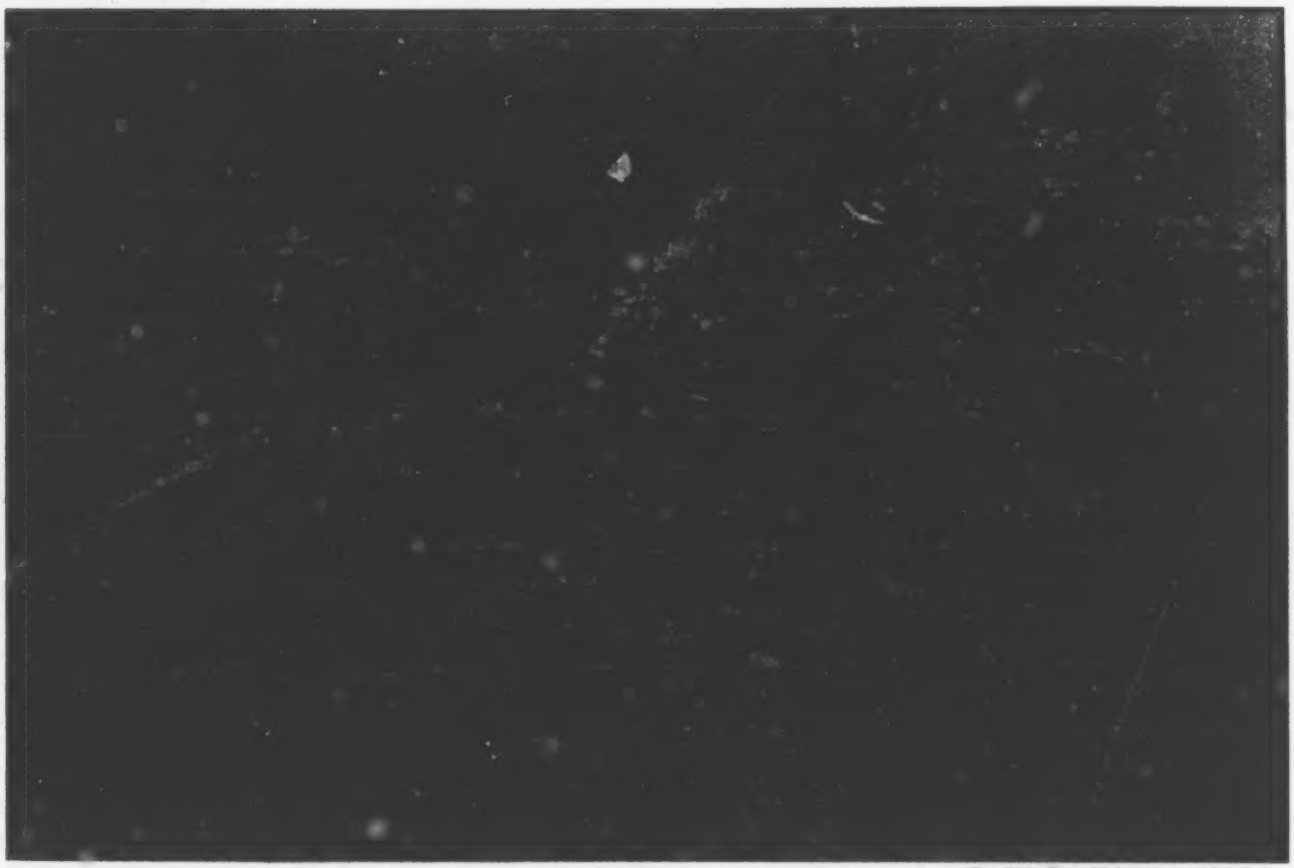

The Ohio State University at Mansfield

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Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web

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Bobby G. Malone
Fred W. Nay
Brad E. Oliver
Nancy G. Saunders
Ball State University

Abstract

This study utilized the World Wide Web and a "Class Page" to evaluate interaction strategies in a distance education setting. Participants were primarily elementary school teachers (n= 47 graduate students) who completed survey instruments concerning their participation on the "Class Page", interactions with both the instructor and other students, and utilization of linked Web resources. An initial survey regarding students' computer literacy skills and usage proficiencies was followed by seven additional surveys which focused upon "Page" use and interaction patterns. Among the findings were: student views regarding the value of getting to know fellow classmates shifted from zero percent (Week 2) to 88 percent (Week 15); students judging they were able freely to express their views went from 11 percent (Week 2) to 91 percent (Week 15). Increases were also noted concerning student out-of-class participation, enjoyment using the Internet, use of e-mail, and appreciation of the distance environment tools for encouraging involvement and interaction. Although many students questioned the usefulness of the "Page" at the beginning of the semester, the final survey found all students viewed the "Page" as beneficial. Analysis of the data found both interaction and class involvement were greatly enhanced through the "Class Page" and the Web based tools which supported the "Page" in this distance education environment.

Introduction

The Internet, specifically the World Wide Web, has the potential to reinforce and enhance university teaching and learning. It is beginning to have a massive impact upon faculty and students on many college campuses. Jeffrey R. Young reported in the *Chronicle of Higher Education* that UCLA "will provide a Web page for every course in its largest unit, the College of Letters and Science", by the beginning of the upcoming Fall 1997 Semester. This promise "amounts to a revolution in the way the university views the Internet" (*Chronicle of Higher Education*, August 1, 1997).

Much of the hype behind this clamor has been based upon reported early successes of Web class pages. As a result, some colleges and administrators have concluded such pages should become universal because the utilization benefits of this powerful communication strategy have been so obvious. The easy access to information and learning activities provided through the Web create a newly defined learning environment. The dynamic and pervasive nature of Web technologies make the prospect of gaining access to information, communication, and learning through this format an educational transformation that is just beginning to emerge.

The example from UCLA is common at many universities; however, these developments raise questions such as: What data have been collected regarding both learning effectiveness and student experiences utilizing Web based technologies? What strategies are planned to assist technophobic faculty in developing the requisite skills to develop learner focused Web pages? What type of technical support is needed to develop dynamic interactive uses of the Web? Does the Internet provide the educational promise that seems so real? Will this technology stimulate faculty and students to teach and learn in different ways? Can learning communities be developed and sustained utilizing this technology?

Purpose and Methodology

Educational theorists have long claimed that effective learning is enhanced by the active involvement of the learner (see: Rotter, 1954; Rogers, 1969; Astin, 1984; Holmberg, 1989; and Johnson & Johnson, 1994). If learning requires interaction among learners, then educators need to develop and assess strategies that encourage interaction in the educational setting. It is critical to plan for interactivity in a distance education setting in which one way video with two way audio is utilized as the delivery system, as was the case in this study environment. The specific focus of this study was a distance education classroom that utilized the World Wide Web and a "Class Page" designed and developed for a specific graduate level course in Curriculum.

The purpose of the study was to collect data regarding the impact of utilizing an asynchronous "Class Page" to en-

hance: (1) interaction between the instructor and students, (2) interaction between students and peers at different sites, and (3) student utilization of Web resources provided through the "Class Page".

The participants were primarily elementary school teachers (47 graduate students) enrolled in a television course entitled "Elementary School Curriculum" (EdCur 610) during the Spring Semester, 1997. Data were collected through the use of survey instruments developed to determine participants' perceptions and actions regarding the "Class Page" and their interactions with both the instructor and other students enrolled in the class. An electronic Web compatible survey software, "**inQsit**", developed by the University Computing Services at Ball State University, was utilized to collect data through the "Class Page" itself. This resource provided a wide array of survey and questionnaire options: Instruments using Likert type scales, semantic differential formats, single word responses, short answer responses, and essay responses were used to collect the data.

A series of time dated surveys (eight totally) were administered during the semester. Data collected from these surveys were compiled and reported in raw numbers and percentages rounded to the nearest whole number. The resulting frequency and interaction patterns were used to interpret the responses and activities attributed to the "Class Page".

Why Create a "Class Page"?

The "Class Page" was designed and developed to increase student interaction in a typical distance learning environment. The development process was a team effort which involved multiple campus units: the University Computing Services, the Teleplex, the University Library, and the Department of Educational Leadership. The individuals from these units who worked on this team possessed varied and unique skills that were essential to the creation and utilization of an interactive "Class Page".

As consumers of television most adults have learned to be passive in response to this medium, i.e. we view and do not expect to be engaged in dialogue with either the presenter or the topic. To combat this existing learned behavior, the "Page" was designed to promote active student involvement in the learning process both prior to coming to the class and during the live broadcast itself.

Students taking classes at off-campus sites do not have the resource advantages of those on campus. To minimize this problem, a multitude of instructional resources was provided on the "Class Page". For example, the University Library was on the Web and electronically linked to every college and university library in the state. Adding this link made access feasible for each distance site student to any higher education library in the state. Several other library links such as the Library of Congress, a virtual reference library, and several Internet libraries were established to promote accessibility and minimize travel time for securing resources. Numerous Web links were added to promote additional resource opportunities for students, e.g. sites of on-line journals and magazines, specific content areas, state and federal government education agencies, museums, professional organizations, children's resources, teacher resources, and multiple search engines were linked for students to explore and to utilize in preparing for class.

A specific goal of the "Class Page" was to establish a forum for students to exchange ideas, experiences, and successes. This was accomplished through the creation of user friendly pages that enabled the students to post ideas directly on the Web by providing information on a brief form, typing messages, and clicking the "post" button. Three pages utilized this process: (1) "Motivation Ideas," a page where students posted ideas found to be valuable learning activities for elementary students, i.e. classroom successes; (2) "Projects," a page where students posted their work on a project where peers could develop knowledge, provide assistance, and share experiences as the individual or group worked on the activity; and (3) "Discussion Area," a modified newsgroup format where students could discuss class topics and respond to the views of their classmates prior to the class meeting when the topic was discussed. Students could post questions or follow-up discussion items following the class. Each of these public areas was put on the Web for consumption by the instructor, graduate assistants, and class members.

A private forum was needed for student exchanges with the instructor, graduate assistants, and class peers as well as with working class groups. A post office was established with e-mail addresses which linked class members to each other privately. To personalize the post office, a small individual photo icon was added to individual e-mail links. This aspect of the "Class Page" was not monitored by the instructor; however, feedback from many students indicated that this was a valuable aspect of the communication process and one that was used extensively in dialogue with peers, instructor and graduate assistants. The instructor typically received e-mail from two-thirds of the class members weekly. During the semester all distant site students communicated with the instructor through this process.

The instructor prepared a "Class Questions" page as a way of stimulating student thought about specific topics prior to class. This also encouraged and assisted the students in their class preparation. Students were encouraged to dialogue with other students in the "Discussion Area" before the class regarding their experiences and thoughts on the topic. The instructor also provided a "Class Handouts" page. This page included links to Web sites and resources that pertained to the topic and handouts which were scanned and put on the Web site for student use. These were designed to assist the student in locating resources on the topic. They could also be used for the weekly written critiques regarding the topic or area being discussed. Both the "questions" and the "handouts" were designed to enhance class preparation and to make time spent in class more interesting and valuable.

One of the planned purposes of this teaching / learning experience was to model instructional technology and its uses for teachers and schools. Dr. Albert Schweitzer eloquently expressed this concept several years ago when he stated: "Modeling isn't the best way to teach. It is the only way to teach." Classroom teachers and elementary schools need to be exposed to alternative teaching and learning styles. It is essential these be modeled in the university distance learning environment. The old adage "we teach as we were taught" may be all too accurate; however, we need not perpetuate the "talking head" syndrome in distance education. To establish a learning community in the distance education environment it is essential to think about the models utilized in presenting the course content.

The "Class Page" was created to accomplish the following goals:

- to increase classroom interaction
- to provide instructional resources
- to establish a communication forum
- to supplement class preparation
- to create a user friendly site, and
- to model instructional technology

The overarching goal in the developmental process was simple. The instructor wanted what every teacher wants—student involvement and engagement in learning! The challenge was to create a dynamic, interactive learning community in a distance education environment.

Data Relative to the Utilization of the "Class Page"

At the beginning of the semester students were surveyed regarding their computer literacy skills and usage patterns. These data were critical to the success of the project since computer skills were essential to the effective use of Web based technologies. Initially 70% of the population reported they had a personal computer in their home; 92% had a computer available at work. Both were used primarily in word processing tasks. However, only 57% of the available computers had Internet access. The prime Internet provider was America On-line (19% of the total population); these data were of value later because during the semester the only provider that consistently had problems in actively enabling students to use the sites and post ideas to the class Web site were students using the AOL service. This could be explained in part due to the heavy traffic found on this provider's service, but the system interfaces and early software did not support the interactivity available through the "Class Page". Only 54% of the students had previously used electronic mail. Eight percent (8%) of the students enrolled in the class used the Internet on a regular basis; yet, only one in three students had used the Internet more than once prior to this class. Fifty-seven per cent (57%) had never performed any function on the Internet. The overwhelming majority of those enrolled did not have familiarity with newsgroups. chat rooms, or search engines. Only 5% of the population described themselves as being "very skilled" in using this resource. When asked if computer training would be helpful, 72% responded in the affirmative; and 86% requested help in using the Internet. When asked "which computer-related area(s) do you anticipate will be a challenge": 27% indicated finding an available Internet-linked computer; 14% thought personal lack of computer skills would be a problem; 22% expressed discomfort with computer use; 43% expressed concern about getting help with computer related problems; and 30% did not anticipate the above areas would be a challenge.

The above data, combined with additional data not reported here, confirmed an erroneous assumption; we had over-assumed both skill levels and experiences in our population. This challenge was perceived as an opportunity to provide valuable experiences and skills to a group of professional educators and thereby enhance their classroom effectiveness.

The survey administered following the first two weeks of class confirmed our optimism regarding the student perspective of viewing this as an opportunity. Using a five point scale from "strongly disagree" to " strongly agree", 85% of the students agreed or strongly agreed they would learn new computer skills using the "Class Page". Almost four of every five students (79%) indicated they enjoyed exploring the resources available on the "Class Page". Seventy-one per cent (71%) strongly agreed exploring the Internet was an enjoyable new experience.

Frustration was also expressed with the new expectation associated with using this resource. Students did not see the "Class Page" as a way to get to know fellow classmates (no one "agreed" or "strongly agreed" with this statement), and few saw the "Page" as a vehicle to discuss class content (29% "agreed" or "strongly agreed"). Only 11% "agreed" it was a vehicle to express their views. This early feedback indicated we desperately needed to teach the students to utilize the "Page" as a learning and communicating resource. In spite of these frustrations 83% of the students provided specific examples of content or ideas that were helpful to them in the initial classes. In other words, class meeting time was conforming to or exceeding their expectations. This was not a surprise as this was familiar territory for the students based upon their previous class experiences.

Initial attempts by students to utilize the Web technologies pointed out specific problem areas. An early determination was made to avoid as many frustration areas with the "Page" as possible for the students. The first attempt to use e-mail was only marginally successful, as most students at the distance sites did not know the personal password for their VAX account through the University computing system to access e-mail. In fact, most of these students had not previously used the campus computing system. The "Discussion Area" was originally an external newsreader program and students without previous experience using such technologies struggled. Rather than spend time trying to

make what had been proposed work, new solutions were created; early technical failures were rapidly discontinued. The University Computing Services personnel contributed many hours of work to make needed changes and to create user-friendly applications. Ultimately Web based e-mail was developed to correct the first problem, the second problem was changed by developing a Web based newsreader. These early frustrations were intimidating for some students and probably slowed their willingness to engage in interaction through the "Page".

As the semester progressed, more students engaged in utilizing the "Class Page" as a learning resource. At six weeks, 58% of the students indicated they were secure in their use of the "Page"; 62% acknowledged it encouraged out-of-class participation; and two of three students reported they enjoyed exploring the Internet through the "Page". Half of the students reported they found additional class resources through the web sites posted on the "Page", and 77% reported they were using e-mail to correspond with fellow students.

By the 10th and 11th week the feedback on the utilization of the "Page" was becoming increasingly positive. Three of every five students reported the distance learning setting encouraged class involvement. Over three of four students (76%) indicated the "Discussion Area" on the "Page" was encouraging the examination of important topics; 83% of the respondents stated they were gaining important computer competencies; 86% reported the "Page" was user friendly. Regarding the earlier reported fear of personal technical problems, 91% reported they thought the University support provided was very good or excellent. Other aspects of the "Page" were designed to encourage interactivity, and respondents reported course "handouts" as very good or excellent (72%); "class questions" were stimulating for thought and discussion (78%); the notice board was keeping them informed (84%); the linked Web sites were providing valuable educational resources (81%); and the usefulness of the "Page" was judged as valuable (80%). More than four of every five students (83%) gave examples of actions they had taken to make the "Page" valuable to them in out-of-class activities.

A survey administered during the 13th week of the semester found that 66% of the students were regularly using the "Page" to interact with classmates. Only 6% reported they "strongly agreed" with the statement "I am frustrated when using the 'Class Page'." When asked about concerns, two students expressed continuing frustrations with established class expectations, and five described concerns that would be analyzed as positive; e.g., "I have enjoyed this class. Sorry for the delay in the submission of . . .", and "I am always concerned with keeping up with class assignments, but so far it hasn't been a big problem." Seventy-two per cent (72%) of the respondents provided specific examples of concepts or ideas they found helpful from using the "Page" and attending class during the previous week.

The final class survey, a required Faculty / Course Assessment Form, was administered during the 15th week of the semester. Several questions were repeated on this Form to determine if changes had occurred in student perceptions regarding the "Class Page" and the way it was used. The respondents (62%) reported that interactions on the "Page" stimulated critical thinking. Eighty-five per cent (85%) deemed the resources on the "Class Page" to be relevant to course objectives and their learning; and 77% judged the "Page" helped achieve course purposes. When judging the expectations of students using the "Page" 82% reported this was appropriate to their current level of development. Over nine of every ten students (91%) indicated they felt free to express "ideas, judgments, and questions".

The fundamental purpose behind the development of this technology was to increase interaction. Eighty-eight per cent (88%) of the students reported interactions with other students as very helpful in mastering course concepts and competencies. One hundred per cent (100%) indicated peer interaction was very helpful. However, when asked what role the "Page" played in the process of increasing interaction only 50% judged it to be very helpful. One third of the respondents were undecided or had no opinion on this. One can only speculate how individuals at varied sites would interact with individuals at other sites without the technologies provided through the "Page". One additional item asked if "Page" participation encouraged the student to apply concepts and competencies beyond the context of the distance education classroom; 86% reported this indeed was the case. Analysis of written responses to open ended questions found that only one respondent failed to give examples regarding the value of using the "Page" during the semester.

Summary

In the distance education environment it is critical for the instructor to focus upon pre-planned interaction strategy components to enhance involvement and learning. The absence of such planned learner engagement will potentially result in the one way delivery of instructor lecture information with little student interaction with either the instructor or other students. One of the persistent criticisms of distance education has been that the instructional approach used too often has involved what has been called the "talking head" syndrome approach, i.e. information is provided with very little exchange between students and instructor. An alternative to address this concern must consider ways to increase learner efficacy through greater student involvement (Bates, 1995; Sayers, 1996).

This study involved the use of current Web technologies combined with the creation of a user-friendly set of tools to enable the distance education classroom to become more interactive. The course was designed and delivered with the goal of enhancing interaction through the utilization of a "Class Page" accessed on the World Wide Web. This "Page" was developed to promote numerous opportunities for stu-

dents to become actively involved in both course content and interaction with the instructor and class peers.

Data were collected during the course of the semester to develop understandings regarding the potential impact and use of the developed "Page" upon both involvement and interaction on the part of the students. The evidence collected regarding student behavioral changes relative to interaction during the semester was dramatic. The impact of the "Page" upon both interaction and learning was substantiated. Multiple items can be used for illustrative purposes. When students were asked about their views regarding the value of getting to know fellow classmates, perceptions shifted from 0% (Week 2 survey) to 88% (Week 15 survey). An increasing number of students judged they were freely able to express their views (11% Week 2, to 91% Week 15). Increases were also noted across the semester in questions about out of class participation, enjoyment using the Internet, use of e-mail, and perceptions regarding the distance environment tools encouraging involvement and interaction.

At the beginning of the term many of the students had questions or concerns about the potential usefulness of the "Page"; the final survey found that all (100%) viewed the "Page" as useful. The electronic monitoring of the "Page" use found continued increase in use through the fifth week of class, and maintained consistent use on the part of students from the sixth week of the term through the end of the semester. Following completion of the class, over half of the enrolled students requested they be permitted to continue using the resources on the "Page"; this indeed was gratifying remembering the concerns, fears, and minimal Internet skills which existed at the beginning of the semester. The only aspect of the "Page" which was not made available following the end of semester was the e-mail post office as this area needed to be reestablished for subsequent students entering the class the following semester.

The "Class Page" was developed and used to create a valuable connecting bridge that linked instruction with technology. The utilization of this resource greatly enhanced interaction and contributed to the successful learning results which emerged from this distance education classroom. The successes which resulted were based upon the team support provided through the collaboration of dedicated University Computing Services personnel, supportive University Teleplex personnel, and exceptional graduate assistants. As a result, students enrolled in the distance education class, those collaborating to make the technology and instruction effective, and the University community benefitted. The initial goal to enhance distance education classroom interaction utilizing the Web was realized. This learning experience produced a positive impact not only in the distance education classroom, but also in the broader context of an emerging University focus upon technological tools and opportunities to assist instructional delivery.

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Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment

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Fred W. Nay
Brad E. Oliver
Jay C. Thompson, Jr.
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Abstract

This qualitative study examined student responses toward an interactive Internet site supplementing a multimedia graduate level distance learning course at Ball State University. The course, "Elementary School Curriculum," was taught in a studio classroom and transmitted to five distant sites in Indiana. Technology included two-way audio signals and one-way video signals for in-class interaction and an Internet World Wide Web site for out-of-class interaction. Qualitative evidence collection techniques included focus group interviews, telephone interviews, and eight survey instruments. Analysis of students' responses to the Internet site focused on coping strategies developed by students to manage the stresses and benefits of their computer involvement. Students reported strategies for managing personal resources, the computer environment, self, and others. Predominant themes in student reactions included concerns associated with communication issues, with computer involvement, and with computer and Internet access. Benefits most frequently identified were the sense of empowerment and the satisfaction of sharing a space with fellow classmates. Implications drawn include the value of moderator leadership, the importance of a face-to-face encounter, the challenge of the on-line text-based medium, the influence of learning and temperament styles, and the development of computer-supported collaborative learning opportunities.

Introduction

The distance learning environment has long been a challenge and a concern for educators who base their practices upon the learning theories of Piaget, Rotter and Vygotsky. Tension between practice and theory results from the lack of interactivity characteristic of the distance learning setting. Interactivity describes the manner in which the learner dialogues with the self, with the course material, and with others during a learning activity (Baker-Albaugh, 1993). It is the interpersonal dialogue with others so critical for productive learning that is typically absent in the distance learning classroom. The benefits of this interactivity among learners include increases in learning effectiveness (Bates, 1993), higher levels of cognitive processing (Garrison, 1993), and development of collaborative and cooperative learning skills (Berge, 1995). Recognition of these student-related benefits resulting from interpersonal interaction has stimulated the development and application of interactive technologies in the field of distance learning.

Emerging computer technologies are capable of facilitating an interpersonal dimension within the distance learning environment. Currently, computers are a technological application widely used for distance course delivery (Wells, 1992). Computers are not commonly used as a means for providing interactive, interpersonal communication within distance learning courses carried by other media (Mason and Kaye, 1989). Harasim (1992) stated computers can potentially "contribute to a sense of community within the group, forging a social bond that can offer important motivational and cognitive benefits with the learning activities" (p. iii). To achieve these motivational and cognitive benefits, distance educators today must design, develop, and deliver interactive learning opportunities using computer technologies. The use of computer technologies, when combined with other complimenting media, can provide the distance learner with a balanced, productive, and interactive learning environment (Bates, 1995; Eastmond, 1995; Nipper, 1989) and facilitate flexible interpersonal communication among learners independent of time and space (Paulsen, 1992).

A recognized authority on distance education, Anthony Bates has stated: "Interaction between the learner and other learners ... is possibly the most important form of interaction for many learners, but it has tended to be neglected in distance education" (1990, p. 6). Recognition of this neglect has prompted distance educators to find new ways to provide for the social and intellectual needs of their students. In this study, student responses toward one such attempt to provide for the interactive, interpersonal needs of learners in a distance classroom were examined. The purpose of this study was to describe student attitudes toward the social and intellectual interaction with class members on an Internet site designed to supplement a multimedia distance learning experience.

Methodology and Theoretical Framework

The purpose of qualitative descriptive research is to observe, describe, and explain events or phenomena. The pur-

1342

pose of this study was to describe a specific phenomenon within a specific situation. The phenomenon was the computer-mediated communication among students; the situation was the interactive computer environment of a distance learning setting. Because this research was qualitative, phenomenon-centered, and situation-specific it is a case study (Merriam, 1988). Therefore, the research design incorporates case study assumptions and methodology.

The goal of a qualitative case study is to understand the meaning of observed experiences. From a constructivist viewpoint, the qualitative researcher assumes the existence of multiple realities that result from personal interactions and perceptions. The researcher seeks to understand the subjective phenomenon of perceptions through an inductive process of building concepts, propositions and theories (Denzin & Lincoln, 1994). The purpose of this case study was inductively to understand and describe student attitudes toward the social and intellectual interaction with class members on an Internet site. In doing so, the researcher was the primary instrument, able to respond to the context, adapt techniques to the circumstances, and process, clarify, and summarize evidence as it was collected (Guba & Lincoln, 1981).

Within the constructivist perspective, this study was based upon a theoretical foundation of Piaget, Rotter, and Vygotsky. A fundamental assumption of Piaget's cognitive theory is that the learner is necessarily active (Crook, 1996). Building upon that concept, Julian Rotter (1954), in his *Social Learning Theory*, established the assumption that meaningful learning occurs in a social environment, through social interactions with other people. In 1978, cultural theorist Vygotsky proposed that all cognitive functions are first experienced in the public forum of social interaction. He stated: "All higher functions originate as actual relationships between human individuals" (Vygotsky, 1978, p. 57).

Upon this theoretical foundation, collaborative learning theories are based. The collaborative learning theories of Johnson and Johnson (1975) and Slavin (1989) provided the theoretical rationale for this study. Collaborative learning requires the dynamic participation of individuals working together to construct knowledge. Knowledge construction occurs through social and intellectual interaction with peers and experts. Howard Gardner, et al. (1996) stated that, because of the distributed nature of intelligence, productive learning occurs only in conjunction with other humans and objects. "Most productive human work takes place when individuals are engaged in meaningful and relatively complex projects which ... involve interaction with other persons: mentors and teachers, ... peers and experts, ... teams of collaborators"(p. 224). The interactive Internet site included in this distance learning environment was developed to enable and support the active and collaborative engagement of learners in a meaningful and complex learning environment.

The setting for this study was a distance learning graduate level course offered by the Educational Leadership Department of Ball State University, Muncie, Indiana. The course, "Elementary School Curriculum," was offered Spring semester of 1997 and taught in a studio classroom in the Ball Communications Building. The course was transmitted via the Indiana Higher Education Telecommunications System to five distant sites in Indiana. Class participants included 13 in-studio students, 24 off-site students, two graduate assistants and a professor. The technology supporting the course included two-way audio signals and one-way video signals in-class instruction and interaction, and an Internet-based World Wide Web site for out-of-class interaction.

The World Wide Web site, created specifically for this course, was housed on the Ball State University server and was accessible through any Internet-linked personal computer. This "Class Page" offered the following services and interactive learning opportunities:

- an e-mail Post Office, with photographs of, and links to, all class members, instructors, and technical support personnel;
- a Discussion Area, for out-of-class discussion among students on topics relating to course material and assignments;
- Project Reports and Motivational Ideas—sections that required students to post course assignments for the mutual benefit of class members;
- Cool Class Web Sites—a resource section for educators, linking the "Class Page" to hundreds of educational Web sites;
- BSU Resource Links—a resource section for class participants linking the "Class Page" to Ball State University Web sites;
- a Notice Board, for posting weekly announcements of campus and class events, and reminders of class assignments and schedules;
- a Class Survey section, hosting a biweekly class participant survey;
- a Class Handouts section for delivering course materials and providing links to Web sites especially relevant to the week's topic;
- a Class Questions section, providing questions for out-of-class reflection and discussion regarding the course's topic for the week; and
- general class information sections: "Class Page" Introduction, Syllabus, Technical Tips, Professor Profile, Graduate Assistant Profiles, Visiting Scholar Profile, and Support Crew Member Profiles.

Because the "Class Page" was created to facilitate interaction among class members of "Elementary School Curriculum," participation on this Web site was required. Expectations for participation were clearly stated at the onset of the course.

In this descriptive study, a number of qualitative evidence collection techniques were employed. Focus group interviews were conducted with class members mid-semester. Telephone interviews were conducted with class members one week after

the semester's end. Eight survey instruments were administered, and included the following: a pre-course short answer self-assessment of computer skills; six Likert scale and short answer surveys housed on the "Class Page;" and an overall course evaluation administered during the last class. This evidence was then analyzed and conclusions were drawn.

Findings

To help describe the population of this study, a survey—"Self-Assessment of Computer Skills"—was administered to students attending the first full class of the graduate level course, "Elementary School Curriculum." This self-assessment revealed students' attitudes toward, and frequency of, computer use that importantly impacted this study. For example, whereas 70 percent of the students in the course owned a computer and 92 percent had access to a computer at their workplace, only 30 percent reported feeling comfortable using a computer. Also, although 57 percent of the students had computers with Internet access, 70 percent reported having never, or only once, used the Internet. Three students, of the 37 enrolled, reported feeling comfortable using the Internet and only two students reported feeling competent to obtain Internet resources. Less than 30 percent of the students reported feeling somewhat skilled using a windows environment and, thankfully, 95 percent reported feeling at least somewhat skilled at word processing.

The evidence in this study was collected from interviews and surveys over a period of sixteen weeks. Students enrolled in "Elementary School Curriculum" were required to complete a computer-based survey during the second, fourth, sixth, eighth, tenth, and twelfth week of the course. Focus group interviews were conducted during week eight; telephone interviews were conducted during week sixteen. An end-of-semester course evaluation was completed by students during the last class session.

The evidence collected was categorized into cognitive and affective strategies used by students to manage the course requirement of participation in the Internet-based "Class Page." The cognitive strategies included management of personal resources, such as time, effort and money, and management of the computer environment, such as text-based communication and Internet information overload. The affective strategies included the management of self, such as self-confidence, self-direction and self-efficacy, and the management of others, such as interpersonal networking, and giving and receiving emotional support.

The cognitive strategy of personal resource management was evident as students chose how best to spend their limited resources of time, effort, and money to meet the course requirement of "Class Page" participation. The limitations of time were often mentioned by students in this course. The amount of time spent in locating an Internet-linked computer, accessing and exploring the "Class Page" environment, and fulfilling the "Class Page" course requirements was a constant concern for most class participants. One student admitted, "I'll be honest. If I had known how much time this computer stuff was going to take, I would have picked another class. I don't have time to be running around looking for a computer, then trying to figure all this stuff out." At week ten, 63 percent of the students reported continuing difficulties coping with lack of time and computer availability. Nevertheless, many students developed coping strategies for managing their time. One student shared, "I simply told myself—Tami, you have one hour to do everything you need to do on the "Class Page" before class tomorrow. Get with it." Another student remarked, "I don't see what the big deal is. So, you block out time and tell your family, 'I'm not here. I am in cyberspace.' You close the door and log on."

Learners' efforts also needed to be managed. By week fifteen, 76 percent of the students reported feeling the effort invested in the "Class Page" had enabled them to achieve the course's purpose, had stimulated critical thinking, and had encouraged them to apply course concepts beyond the classroom. One student stated, "You know, you get out of a class what you put into it. When I saw the 'Class Page' requirement I told myself that this was a course I needed. I was really willing to put in the effort to learn about computers and the Internet."

Students reported a number of strategies for managing their effort. One student approached effort management by clarifying basic course requirements and the effort investment of classmates. She shared, "Well, my friends and I got onto the Discussion Area together after a few weeks of class to see if anyone else had posted stuff. We looked at the names and it was the same five names, so we thought—Okay, we're in the majority of people. So we didn't feel a big urge to get into the Discussion Area. We figured we had enough to do. I'll be honest, I'm not making the effort unless I have to." Another student was less successful: "I just get overwhelmed and stay on-line for hours hardly knowing where to turn next. I want to do my best, but I don't know how to do that. I mean, how much does he want? How much effort do I need to invest to get an A?"

A number of students chose to invest financial resources in computer equipment and Internet access to save time and effort. One student enthused, "I am so computer challenged! This course forced me to get with it. I mean, I went out and bought everything I needed—computer, modem, access—the whole shot. Now I am poor, but it was worth every penny. It has saved me hours of travel, of waiting, of fooling around on strange computers. My whole family has benefited!" By contrast, one student complained, "I resent having to buy Internet access for $25 a month when I'm already paying for this class. And just because I can't find a computer that isn't already busy with someone else playing on the Internet. So, now I have a connection, but it's going as soon as the class is over!" By week ten, 25 percent of the students reported a continuing concern with computer costs.

The personal resources of time, effort and money were guarded, examined and spent by students to meet the requirements of this course. Management of these personal resources was one cognitive strategy reported by the students of "Elementary School Curriculum."

A second cognitive strategy, that of computer environment management, was evident as students were challenged to communicate in a text-only context and to handle the task of navigating the Internet. Student responses at week two illustrate the extent of this management challenge: 79 percent of the enrolled students said that Internet exploration would be a new experience for them, and 92 percent expected to learn new computer skills through "Class Page" participation.

The text-based nature of the "Class Page" offered some students the opportunity to improve writing skills. One student shared, "Internet communicating was easy! I put a couple of ideas out on the Discussion Area. You know, it is rather intimidating to put a thought out there on the Internet for the whole world to see and to know that my sentences sound awful and I'm probably misspelling a bunch of words. But I decided—too bad! I was going to do it! I knew the embarrassment would force me to write better. Ha!" Another student said, "You know, I would read my writing after I sent it and it would always sound so stupid to me. But then, I would screw up my courage and try writing something again. This time I would work harder at my writing. I actually think I'm better at writing now."

Other students were more intimidated. One student confided, "I just can't write. I like to read what others write. But I can't do it myself. I mean—what are the readers thinking? What is their expression when they read my idea?" Another student responded, "The 'Class Page' is okay for those people who like to stick their necks out, who talk in class and always have an opinion. They are just that way. But I'm not. I'm not going to write anything down that I'm not forced to." By week eight, while 66 percent of the students reported gaining computer competencies from "Class Page" participation, only 31 percent agreed that writing competencies had been gained. 51 percent of the students stated that the "Class Page" experience had not helped them learn to write important concepts.

The wealth of resources available on the Internet also required management. This management task was expedited by the Internet links provided in "Cool Class Web Sites." Seventy-seven percent of the students reported that a major advantage of the "Class Page" was its Internet resource links. As one student stated, "Without the Cool Class Web Sites I would have been lost. I spent many happy hours exploring links from the "Class Page" and beyond. It was so helpful to have a starting place. Of course I did have to manage to make my way around the net after leaving the "Class Page." But, little by little, I learned. It just took time." By week four, students were actively exploring the "Class Page," with 88 percent of the students completing the survey, and 70 percent posting assignments. By week fifteen, 90 percent of the students reported using Internet resources other than those on the "Class Page." One student shared, "I managed the infoglut by bookmarking cool sites, printing worthwhile articles to share with classmates, keeping my eye on the time, and keeping control of my curiosity. You know, without control, you can go crazy on the Internet and never leave it!" Another student stated, "At the beginning I was really serious about the whole thing and spent a lot of time on it. But lately I've only done things that are helpful to me. I've learned to manage the 'Class Page' and the Internet for my benefit and convenience."

By week ten, 44 percent of the students considered the "Class Page" a worthwhile supplement to "Elementary School Curriculum." By week fifteen, 95 percent stated that "Class Page" activities were relevant to the stated objectives of the course. As one student commented, "At first I was grousing around, complaining that I didn't have the time or energy to bother with computer stuff. Then my husband took me in hand. He said—'Look, you're a teacher. So, what's more important to teach....The Spanish Civil War or computer skills? And how are you going to teach computer skills if you don't have them yourself?' So he bought a computer and hooked us up to the Internet. It hasn't been easy, but it has been fun! I mean, what a resource! And how to manage it? Wow, I'm still working on that!"

Students' cognitive strategies for coping with the course requirement of "Class Page" participation included management of both personal resources and the computer environment. Most students became successful managers; some did not. Computer comfort and competency influenced students' success in the "Class Page" context.

The affective strategy of self-management included controlling self-confidence, encouraging self-direction and recognizing self-efficacy. Students spoke much about their feelings related to the "Class Page." At week two of the course, 63 percent of the students reported feelings of anxiety concerning their computer competency. At the same time, 79 percent expected to enjoy using the "Class Page." Thus, at the onset of the course, students were tempering their feelings of inadequacy with positive expectations. As one student shared, "I knew I was in big trouble. What did I know about computers? Nothing. But I've been in pickles before and I'd seen my way out. I knew that, with hard work and a little luck, I could figure out what I was doing before anyone realized how little I knew!"

By week ten, 44 percent of the students were still concerned with their computer competency, 53 percent wanted classmate support, and 47 percent needed instructor encouragement. Nevertheless, only 13 percent of the students were now frustrated with the "Class Page," 55 percent felt secure while on the "Class Page," and 81 percent felt free to express their personal opinions on the "Class Page." Comments such as "I'm over my computerphobia!" and "The fear is gone!" and "My computer anxiety has eased a bit!" describe students who coped with a threatening environment by managing their self-confidence. One student shared, "I have never been on a computer. I have never been on the Internet. All my life I have been totally intimidated by it. Now I can actually click on something and get it! I told myself I could do it, and I did!"

Not all students were so successful managing their self-confidence. One student confided, "I have never been on the Internet before and I was really scared of going on it. So, I haven't. I just can't do it, so I get my friends to do my surveys and collect class questions and post things for me. I just can't." Another complained, "I'm really upset. If I had known that I would have to do computers I wouldn't have signed on. My

friends said they would help me but they haven't. So what am I supposed to do?" Thus, self-confidence was both a condition and an approach that could be managed. Some students were more adept at developing and applying self-confidence than others.

Management of self-direction was another affective strategy used by many students. Self-direction was illustrated by students' willingness and ability to make choices that led to their successful course completion. For example, one student commented, "This is my life. This is my degree. If I take a course that requires that I stretch and learn new things, then I need to meet that head on. Whining about it is degrading. I can choose to learn. My fear does not need to dictate my actions." By week eight, 83 percent of the students had found the university's technical computer assistance an excellent resource. Seventy-seven percent rated the "Class Page" Notice Board and Class Questions as excellent for keeping them informed and for stimulating thought. Thus, students were choosing to become actively involved with the "Class Page" in order to meet both in-class and out-of-class participation requirements.

The affective strategy of self-management included managing self-efficacy—the sense of personal control over one's environment. As students moved from week one through week fifteen of "Elementary School Curriculum," a sense of increasing control was evident in student responses. Whereas at week two, 63 percent of the students reported feeling anxious about the "Class Page," by week ten 55 percent reported feeling secure and 71 percent reported successfully using the "Class Page" on a consistent basis. By week fifteen, 95 percent of the students felt the challenges presented in the course, including participation on the "Class Page," were appropriate to their level of development. As one student explained, "It's an issue of control, isn't it? When you feel like the master of your own work, you feel successful, empowered. At first the "Class Page" scared me. Now that I have struggled with it and mastered it, I feel terrific—like I can take on the world!" This sense of control inspired one student to comment, "I have really liked this class. What a challenge. What an accomplishment. I'd recommend it to anyone!" By week twelve, 75 percent of the students stated they would recommend this class to friends and co-workers, 89 percent concluded they had enjoyed the class, and 64 percent felt secure in their use of the "Class Page."

Not every student developed a sense of self-efficacy. One student shared, "I can't cope. I know I'm supposed to be the boss. I mean, I can always pull the plug, turn the computer off. But it scares me. So I stay away. My friends do my surveys and post my ideas. I can't." Another student confessed, "When I sit at a computer I'm at its mercy." Thus, whereas some students assertively took control of the computer environment, others were controlled by it.

With each self-management strategy—self-confidence, self-direction, and self-efficacy—assertiveness and a sense of purpose produced more positive results. One student summed it up by saying, "I just take myself in hand. I tell myself—stop whining and start working. Self-defeating talk is a dead-end road."

A second affective strategy described by students for coping with the "Class Page" participation requirement was the management of others. This management approach included interpersonal networking and the giving and receiving of emotional support. The "Class Page" was specifically designed to support the interpersonal dimension of the distance learning environment. Interestingly, the majority of students did not view the "Class Page" as a vehicle for developing relationships among fellow classmates. At week four, 53 percent of the students strongly disagreed with the statement that the "Class Page" was useful to get to know fellow classmates and 47 percent were undecided. By week six, only 21 percent of the students had participated in a discussion on the "Class Page." By week eight, 49 percent of the students strongly disagreed that, through the "Class Page," students had become acquainted with a fellow classmate, and by week twelve, 79 percent still had not participated in a "Class Page" group discussion. By the end of class, although 90 percent of the students felt free to express their ideas and opinions on the "Class Page," only a handful had done so in the discussion area.

Despite this low participation rate, the "Class Page" importantly contributed to the interpersonal networking among the class participants. Comments such as "Oh, I tackled that 'Class Page' problem with Janet. It's so much more fun with two!" and "My friends from our site ordered pizza and went to Laurie's house after class. We wanted to try to figure out the 'Class Page' assignment!" were common. Although interpersonal interactions on the "Class Page" were not highly valued, the relationships that developed as a result of the "Class Page" participation requirement were. As one student disclosed, "Well, I felt kind of guilty, but I went over to Dawn's to get help posting my project. When I got there, there was Jennifer and Kathy. They needed help, too! So we had a computer party and got all our work done!" Another student explained, "The guys at my site didn't bother with the Discussion Area on the 'Class Page.' We just discussed among ourselves, and enjoyed that a lot. We did post our assignments, we shared information off the Web, and we spent a lot of time together in class and on our computers. In fact, I email them all the time."

The giving and receiving of emotional support among class participants was a second strategy in the management of others. This emotional support has been illustrated by many of the comments already quoted. Student responses were peppered with expressions of appreciation for the care and encouragement of fellow classmates. As one student exclaimed, "I don't know what I would have done without Jane! She was so encouraging!" Another shared, "I feel lucky to have been at a site with such nice people. They took the time to care about each other. When I was so afraid of the computer, they talked me through it. We grew very close."

Although at week eight interactions among class members on the "Class Page" were rated poor by 31 percent of class participants and good by only 29 percent, student comments illustrated that the "Class Page" provided the impetus for developing supportive interpersonal relationships among class members. The two affective strategies used by students to handle

the "Class Page" environment—the management of self and the management of others—enabled interpersonal growth, which was, in turn, enabled by the "Class Page" environment. These affective strategies, in combination with the cognitive strategies described, enabled students to successfully complete the "Elementary School Curriculum" course requirements.

Reflections on the Findings

A number of cognitive and affective strategies were applied by graduate students enrolled in the distance learning course, "Elementary School Curriculum," to cope with the course requirement of participation on an Internet-based "Class Page." These strategies included management of personal resources, management of the computer environment, management of self, and management of others.

Imbedded in these strategies were a number of common themes. The predominant themes included three stressors and two benefits. The stressors most frequently alluded to were concerns associated with communication issues, with computer involvement, and with computer and Internet access. The benefits most frequently referred to were the sense of empowerment and the satisfaction of having a shared space, a common ground, with fellow classmates.

These five themes, both stressors and benefits, were referred to by students who had successfully managed the "Class Page" participation requirement, as well as those students who had opted out of "Class Page" interaction. Because of their centrality to the findings, the five themes provide a framework for the following discussion.

Discussion

Five themes that warrant further discussion and consideration include three stressors and two benefits. The stressors most frequently alluded to were the anxiety over communication issues, the stress associated with computer involvement, and stresses relating to computer and Internet access. The benefits most frequently referred to were the sense of empowerment and the satisfaction of having a shared space, a common ground, with fellow classmates.

The context for this study was a distance learning experience which included an Internet-based "Class Page" to increase the probability of student-student interaction. Because of this on-line component of the course, students were given the opportunity to interact whenever, wherever and with whomever they chose. The theoretical rationale for designing the on-line course component was based on the collaborative learning theories of Johnson and Johnson (1975) and Slavin (1989). These theories, and supporting research, contend that peer interaction within an educational setting is a critical variable for cognitive development. Peer interaction includes supporting one another in knowledge building, information sharing, social communication, and problem solving. To provide peer interaction within the distance learning setting, theorist Keegan (1986) stressed that distance educators must provide means for overcoming the limitations of the text-based environment, the difficulties of no heard or seen language, and the absence of immediate feedback. These challenges were associated with student-felt anxiety over computer-based communication issues.

The on-line environment can facilitate the sharing of ideas and reflections, the building of understandings, and a common, archived transcript of discussions. While many students thrive within the on-line environment, others shrink from it in fear. This writing apprehension (Velayo, 1994) or communication anxiety (Harasim, 1990) was evident in this study, as students remarked that the feeling of speaking to empty space when writing on-line prevented them from speaking at all. The opportunity to see the work of others and to compare their ideas to those of their classmates caused them great anxiety. The personal risk of sharing an idea with no guarantee of response was often beyond their coping capacity. Students overwhelmed by communication anxiety chose non-participation. Students' effectiveness in the use of self-management strategies impacted their degree of communication anxiety.

Communication anxiety was not uncommon (Feenberg, 1989; Walther and Burgoon, 1992). The text-based nature of the medium placed a premium on skills of written expression and analysis, advantaging the highly motivated, often educationally privileged learner (Nipper, 1989). The benefits of the medium included a reduction of discriminatory communication patterns based on race, gender and physical features (Walther, 1992), a less authoritarian approach to learning and teaching (Nipper, 1989), and more available time for, and control over, communication (Harasim, 1989). Disadvantages of this text-dependent environment included a dependency upon a peer response in an asynchronous context (Feenberg, 1989) and the need to express oneself clearly and analytically only through written messages.

There are means to minimize the communication anxiety caused by using a text-based medium. A moderator can become involved in student interactions, shaping a positive, supportive social environment, and responding to each contribution with sensitivity (Harasim, Hiltz, Teles and Turoff, 1995). The course instructor can acknowledge each participant and recognize student growth (Berge, 1995). Use of humor, wise questioning, and group management (Davie, 1989) can be used to establish a non-threatening environment. The effort required to include all class participants is often rewarded by group cohesiveness and individual learner growth.

The "Class Page" Web site in this study was developed to overcome the social distance between students. Although technology cannot substitute for instructors, technical tools can be used to facilitate learning. How much learning takes place depends upon the willingness of the student to actively participate in the learning process. Successful learning in this context required that students take initiative for their own learning and growth by developing computer skills needed to interact on the course's Internet-based Web site. Because of stress related to computer use, some students in this study were unable or unwilling take this initiative.

The condition of being or feeling computerphobic (Rosen and Maguire, 1990), technostressed (Hedberg and McNamara, 1989), or technophobic (Kinzie, Delacourt and Powers, 1994) was described as a stressor by some study participants as inhibiting, and occasionally prohibiting, their "Class Page" activities. This stress was bound to students' effectiveness in managing self, others, and the computer environment.

Computerphobia has been described as making people feel "uncomfortable, self-conscious, and inefficient" (DeLoughry, 1993, p. A25) when they encounter computers. Through a meta-analysis, Rosen and Maguire (1990) found that writers in empirical literature have predicted that "between one-fourth and one-half of all college students, business people, and school students may be 'computerphobic'" (p. 184). Recent researchers have found computer anxiety can be tempered by educational experiences with computers (Kinzie, et al., 1994) and such experiences contribute to student competence and confidence with computers (Delcourt and Kinzie, 1993). Marcoulides (1988) and Rosen, Sears and Weil (1987) have demonstrated computer experience as one of the best predictors of computer anxiety.

A number of educational approaches have been suggested for overcoming debilitating attitudes toward computer participation. Thorough training and continuing support in computer use (Velayo, 1994), emotionally supportive leadership within the computer environment (Kerr, 1986), and developing relationships through face-to-face meetings (Waggoner, 1992) are strategies suggested in the literature. In this study, all three of these strategies were used. The Assistant Director for University Computing Services, Ball State University, dialogued with class participants during weekly class sessions for the first six weeks of the course. He was available via email 24 hours a day and was perceived as competent and helpful. Supportive leadership within the computer environment was provided by the course professor and two graduate assistants. Two day-long face-to-face class sessions were included in the course schedule. In spite of these strategies, some students remained anxious and were unwilling to participate on the "Class Page."

Access issues created stress for many class participants in "Elementary School Curriculum." Over 30 percent of the students mentioned lack of computer or Internet accessibility as roadblocks to full participation on the "Class Page." Time limitations aggravated the issue of computer accessibility. Students reported having little time to search out an Internet-linked computer, to travel to the located computer, and to actively participate on the "Class Page." Both Burge (1994) and Kearsely, Lynch and Wiser (1995) reported similar results. McConnell (1990) found students felt they had wasted time and experienced unreasonable frustrations when seeking out and communicating through computers.

A number of researchers have reported that peripheral members of organizations have more access to work and social activities through the use of computer technologies (Harasim, 1990; Hartman, Neuwirth, Kiesler, Sproull, Cochran, Palmquist and Zubrow, 1995; Huff, Sproull, and Kiesler, 1989). In contrast, students in this study reported feeling like "outsiders" due to their lack of "Class Page" participation. They perceived that lack of accessibility pushed them to the periphery of class activities. Rumble (1989) found that personal computers have become commonplace in our society. Even so, Olson (1988) cautioned that, if we are to develop the computer as a wide-ranging resource for learners, we must be cautious that their use does not amplify patterns of disadvantage. The value of mediating access difficulties by providing course content via a variety of media and by including opportunities for face-to-face interaction in the distance learning setting should not be overlooked (Eastmond, 1995; Nipper, 1989).

If learning is viewed as a social process, then provision of interactive communication technologies is critical for the productive distance learner. In the distance learning environment, the process of developing a community of scholars is dependent upon open access to the provided interactive technologies. The technology provided in this study was an interactive, Internet-based Web site available to all students through Internet-connected personal computers. This "Class Page" was available 24 hours a day, seven days a week. It provided access to peers and experts at any time and any place. Unfortunately, the convenience of the "Class Page" was irrelevant to a number of students. Due to restraints of work, family, and limited personal resources, some students found the lack of computer accessibility a major source of stress.

Empowerment was a theme which threaded through student experiences and attitudes in this study. The productive use of all four coping strategies reported in the findings resulted in feelings of empowerment and control. Collaborative learning theories emphasize student responsibility for learning. The on-line "Class Page" environment offered students opportunities for active thought and analysis, and required that students take the initiative for their own learning and growth.

In a study of learners' perceptions of computer conferencing, Burge (1994) concluded that students felt empowered in a computer climate that was emotionally supportive, intellectually challenging, information-rich, and interactive with peers and experts. Hiltz (1993) found that, within a computer context, students excelled who were in control of their effort and their learning environment. Harasim (1989) observed that the asynchronous nature of the on-line environment facilitated self-directed learning and expanded learner control over the interactive environment, contributing to learner effectiveness (see also Mason and Kaye, 1990). Class participants reported feeling empowered by the increase of learner responsibility and control in the on-line environment of the "Class Page."

A sense of participating in a shared space in which learners contributed and received support, resources, and information was described as a "Class Page" benefit by many students. Comments such as "We're on a level playing field" and "It's a common ground where we can meet as equals" and "All the resources are available to all of us" expressed the appreciation felt for the democratic nature of the "Class Page.". Participat-

ing in this shared context where resources were equally available to all learners increased students' commitment to the "Class Page" and strengthened their social bonds to one another. This shared space provided a context for collective thinking, for resource access, and for social and intellectual exchanges.

This concept of shared space did not guarantee equal participation and interaction. It was found that only students who effectively employed the coping strategies of management of self, of others, and of the computer environment viewed the "Class Page" as shared space or common ground. Active participation on the "Class Page" developed a sense of membership in a community of scholars.

Both Hiltz (1993) and Harasim (1987) found participation rates in an on-line classroom increasing as students became more involved with each other and with the course material; Nipper (1989) and Eastmond (1995) did not. To encourage on-line participation and the development of a shared space, Eastmond (1995) recommended the provision of strong moderator leadership. Nipper (1989) cautioned that, in order to maintain a focus on educational issues, on-line participation within the shared space required daily instructor attention. The on-line "Class Page" environment in this study was intentionally designed to encourage participation and the perception of a shared space. Strong leadership was provided and the educational focus was maintained. Those students who found the "Class Page" a common meeting ground, where equal standing was credited to all, were successfully managing the on-line environment.

Five themes intertwined through the cognitive and affective strategies employed by students to cope with the Internet-based "Class Page" participation requirement of the "Elementary School Curriculum" course. Of these five themes, three were described as stressors: anxiety over communication issues, the stress associated with computer involvement, and stresses relating to computer and Internet access. Two themes were described as benefits: the sense of empowerment and the satisfaction of having a shared space for social and intellectual interaction. The distance learning context of this study included an Internet-based "Class Page," designed to increase the probability of interaction among students. The effectiveness of the coping strategies developed and employed by students within this learning context importantly impacted their overall satisfaction with, and success in, the "Class Page" environment.

Implications for Practice and Research

Highlighted briefly are five implications for practice and research: the value of moderator leadership, the importance of a face-to-face encounter, the challenges of the on-line text-based medium, the influence of learning and temperament styles, and the development of computer-supported collaborative learning opportunities. To meet the goal of student-student interaction in an on-line environment, the involvement of a discussion area moderator is recommended. The primary role of the moderator is to create and support a positive intellectual and emotional climate for the interactive learning environment.

Moderating computer discussions requires skill, sensitivity, and persistence. Feenberg (1989) recommended using weaving comments to summarize a discussion's main themes, giving credit to those contributing original thoughts. Davie (1989) drew attention to the use of leading and refocusing questions. Hiltz (1993) suggested that requiring student participation may be the only option for maintaining active dialogue. Moderating discussions involves the management of participant identity, the environment's social tone and attitude, and the development of student text-based communication skills. The challenge of moderating the social dynamics of on-line discussions was highlighted by Feenberg, who cautioned, "Failures and breakdowns occur at the social level far more often than at the strictly technical level" (1989, p. 28).

Although often awkward to provide, as well as to attend, the face-to-face encounter for distance learning classmates has been found to enhance the participant's overall learning experience (Fernback and Thompson, 1995; Rheingold, 1993). The face-to-face opportunity places the distance learning classroom in context, clarifies expectations, and initiates learning activities. During face-to-face discussions, class members can learn about network design, initiate relationships, and practice their technical skills. The instructor has the opportunity to develop personal contacts with class participants that are helpful later, when on-line reassurance and advice is required. Learners who have had face-to-face encounters are more likely to communicate effectively on-line because the personal meeting "has provided a number of contextualizing cues that would otherwise be absent from discussions held exclusively within the framework of a computer conference" (Mason and Kaye, 1989, p. 20).

The text-based nature of the on-line environment has been described as impersonal, limiting, and sterile (Feenberg, 1989), as well as reflective, explicit, and information-rich (Harasim, 1989). For educators to effectively improve an educational experience by including a text-based on-line environment, the computer context must be carefully designed.

One of the primary cognitive benefits of text-based interaction is the opportunity for reflective communication. The computer environment can support the "process of articulating thoughts into written speech [involving] deliberate analytical action" (Vygotsky, 1962, p. 99). It offers the student the option to reflect upon and edit one's on-line discussion response. Reflection influences attentiveness, not only to the content, but to the quality of the written message. The educational opportunities provided by this on-line characteristic should not be overlooked by distance educators.

The information-rich medium of the on-line environment is both a boon and a bane. The boon to students is the wealth of information available on the Internet. Although this information-rich source must be managed, its potential for providing learner resources is tremendous. The bane to students is that this rich resource is combined with archived transcripts of every discussion, conversation, and interaction held within the

class context. If expectations are not carefully managed for the on-line classroom, this information-rich resource can fast become incomprehensible and overwhelming. Proactive resource management strategies are required to control the on-line distance learning environment.

The influence of learning styles and temperaments upon the distance learner's educational experience is fertile ground for further research. Most research done to date has focused on the psychological factors affecting learners in traditional settings. Few studies have been found that describe or test the affect of psychological factors upon the distance learner. Atman (1988), in a study of the relationship between psychological type and goal accomplishment among distance learners, suggested a theoretical advantage for distance learners classified as extroverts, intuitives, thinkers, and judgers by the Myers Briggs Type Indicator. Ehrman (1990) discussed major learning style models and speculated upon the applicability to distance education research. Distance education is an expanding educational context that offers a number of unique research opportunities. The relationship between learner characteristics and the distance learning environment is one such opportunity.

Development of computer-supported collaborative learning opportunities should continue as a research priority for distance learning providers. During the 1990s, progress toward providing accessible interpersonal interaction on-line has moved rapidly. Interactive on-line systems have been developed, tested and marketed. This trend must continue to receive institutional support in order to provide distance learners with interpersonal opportunities for growth and development. Harasim, et al. stated that on-line education "based on global interactivity, collaborative learning, and lifelong access to educational activities and resources ... engenders new ways of working, studying, and problem-solving" (1995, p. 278). Access to such an education will enable learners to meet the challenges of the information age in the twenty-first century.

Conclusion

Distance educators are challenged to provide interactive opportunities for students within the distance learning context. Active, collaborative participation in the educational environment is a critical component of the learning process. In this study, social and intellectual interaction among distance learners was supported by an Internet-based "Class Page," which supplemented the course's audio and video delivery system.

Students developed affective and cognitive strategies for coping with this interactive on-line "Class Page" environment. These strategies included management of self and others, management of personal resources, and management of the computer environment. Three stressors and two benefits were identified by class participants as influencing their "Class Page" experience. The stressors were communication anxiety, computer anxiety and access issues. The benefits included a sense of empowerment and involvement in an on-line shared space.

Recommendations for improvement of practice included the suggestion that strong moderator leadership be provided for the interactive discussion area of the "Class Page." The value of an initial face-to-face encounter for distance classmates was discussed and the educational benefits of the text-based on-line environment were examined. Suggestions for future research included the need for studying the impact of student learning styles and temperaments in distance learning environments and the continuing need for innovative computer-supported collaborative learning opportunities.

Educators today are being challenged to appropriate and adapt emerging communication technologies to enrich our distance learning environments. By designing and implementing an interactive, interpersonal dimension for the distance learning environment, educators provide an equitable and potent educational opportunity for learners at a distance.

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Appropriate Educational Applications of the World Wide Web Today

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Abstract

Although the majority of web based educational tools of today are unremarkable, are sometimes difficult to access and are not completely reliable, there is a mounting push for students and faculty to use these tools. The formidable technical challenges that confront students and faculty attempting to implement these technologies often quickly overshadows the more fundamental question—how should existing and future technologies be used in the teaching and learning process? Assuming, for example, that a given piece of technology could be implemented universally without difficulty and perform exactly as expected, what is the impact? Having made fair and unbiased evaluations concerning a given technology, important questions regarding implementation remain. For those that have resigned themselves to providing course material via the web, a common question for both educational institutions as well as individual faculty is if now is the best time to begin. One workable, logical progression path involves using a four-step process. The foundation of this process begins with experimentation, moves to deployment from templates, then to redeveloping pages based on need and student feedback, and finally to using this experience in innovation specifically tailored to the class needs.

Introduction

For many educators, the prospect of integrating technologies such as the World Wide Web into the educational process is likely reminiscent of their early experiences with classroom filmstrip projectors: setup was often awkward and difficult, there were always elusive technical problems with audio or video, content was sometimes less than remarkable, and students' attentions were typically less than undivided. In a like manner, the often-heard criticisms of yesterday's filmstrip could well be made against today's most frequently seen educational Web implementations. Yet, the broad and evolving success of the Web in education shows no signs of slowing. Although haunting images of melting celluloid and exploding projector bulbs no doubt remain, the siren song of the Web continues to grow louder from every direction. The push to create Web-based educational tools from university administrators, technologically aware students, the mass media, and competing institutions has become one that can no longer be set aside.

When Web technologies were first beginning to emerge, speculation abounded over the tremendous implications these held for distance education. As the veil was pulled away however, formable issues concerning real-world feasibility and actual student enrichment through this high technology begin to emerge. Roadblocks such as prohibitive cost, inadequate human resources, and a steep technical learning curve have been, and often continue to remain, barriers to serious educational Web development.

Preceding the more practical (or tactical) issues facing the development of Web technologies in education, there are more fundamental questions concerning if, when, and how these technologies *should* be used in distance education or in any formal teaching and learning model. Before choosing between moderated and open newsgroups for example, it may be necessary to ask what effect newsgroup technology itself has on the social aspects of the learning process. Asked another way: presuming all the technology works exactly as intended, is the learning process being enhanced as a result of the technology use in ways that are meaningful and significant?

Examining the practical roadblocks commonly faced in educational technology integration in the light of fundamental philosophical issues provides a methodology for determining appropriate educational applications of the World Wide Web in today's teaching and learning environment. We are then drawn to ask: Do electronic discussion forums provide students with an enhanced level of communication that contributes significantly to the learning experience? Are moderated or open discussions better suited for classroom discussion? Is creating a class Web page useful or even appropriate when it is known that not all students will have a reasonable level of access? How will students with disabilities, such as visual impairments, access the electronic resources made available to other students?

Is Now the Appropriate Time to Begin Focusing on Web Development?

The growing tide of technological development in education has left little doubt as to whether institutions as a whole (and hence the instructors teaching for them) can avoid integration of the Internet into their curriculum. Yet presently the total ratio of classes on the Web is small when compared to the total number of classes offered, suggesting that while some institutions have rapidly embraced Web development, many others have delayed resource commitment. A wide array of reasons, sometimes compelling, are advanced as a rationale for delaying the investment in or development of Web pages and their related technologies:

- Developing resources on the Web may be an important task, however there are other compelling demands for an instructor's time. Realistically, even an extraordinary amount of effort expended on Web development may not bear fruit for some time.
- Past advances in technology have resulted in improved Web development tools that do in only a few hours what would have taken weeks or months just a short time ago. As technology is constantly moving ahead, similar future advances in the tools of tomorrow will again likely reduce the amount of time it takes to create pages and similarly increase the quality of the work product created.
- No central Web publishing site is available. Without a central publishing site, faculty find it nearly impossible to publish a Web page because of the problems inherent to hosting a Web server.
- Neither appropriate funding nor trained support staff are presently available to assist with new web development technologies. Delaying development may allow a funding window to become available and permit training for support staff.
- Those who wait to develop their sites will be able to build upon the successes and learn from the mistakes of early-adopters investing large amounts of time and other resources in today's Web development.
- Students do not yet have Internet access. This creates an unfair advantage for those who do presently have access as well as unfairly excluding those who do not.

While the above listed reasons could be cited in a wide variety of circumstances, there are good reasons for individual faculty and for the institution as a whole to look past them and move forward with Web development. Administrative perceptions regarding early development of Web pages for education must be realistic and carefully managed for a successful initial implementation. Rewarding early technology adopters, remaining open to alternate directions in the face of short term successes or failures, discontinuing fast-failures of dead-end technology, and providing funding for low-cost trial runs are examples of administrative support that can save an initial Web development effort. Faculty participation in this initial stage of development is crucial; administrators that fail to involve faculty at the beginning will have difficulty procuring enthusiastic support later when buy-in is essential. Even where there are seemingly compelling reasons to delay Web development, there are advantages to moving forward even if on a reduced scale. Some important reasons for moving ahead with development include:

- The Web can be an exciting and challenging area for both students and instructors. Any creative work takes time, and many instructors find great personal and professional reward from the time they invest in Web and related technological development.
- The fact that technology continues to advance and that today's Web-publishing procedures seem tedious and perhaps even arcane serves to suggest that eventual replacement is likely. Technology will *always* be advancing, however delaying development may only result in having to deal with a similar set of problems later.
- Until very recently, an absolute prerequisite of Web page development was the setup of a large, centralized institutional Web server where faculty could publish their pages. Without access to a centralized Web server, a faculty member had no way to publish Web pages or otherwise share them with students. While the centralized Web server remains the generally *preferred* method of publishing instructional Web pages, it is now feasible to host a Web page without access to such resources. Today, the faculty member's personal computer is generally sufficient, provided it connects to the Internet and has reasonable computing power.
- If there is very little money available at an institution-wide level today, there is an even smaller likelihood that sidestepping technologies such as the Web will later result in greater availability of funds. Technologies have evolved to the point that the large investments once needed to get started with Web page hosting and development are no longer necessary. Building a small site using only an existing personal computer connected to the Internet requires an investment as small as fifty dollars. Such low-cost solutions include PC Web server software and page editing tools for Web creation, publishing, and ongoing site maintenance.
- No matter when a person decides to learn about technology, there will be a learning curve and mistakes are probable before polished results come together. Waiting for another person to make all the mistakes only delays valuable learning experiences that will have to be faced in one form or another at some point. There are no substitutes for personal experience with technology.
- All students, including students with disabilities, must have adequate access for the technology to be feasible. Most institutions have on-site public computer labs,

which are available to enrolled students without additional cost. Students in distance education programs are generally required to have access to a computer for electronic access prior to enrollment.

- Today's students do not have the luxury of waiting months or years for Web technologies to become more convenient for their schools, their instructors, or for themselves. Learning to use today's available technology is as much a part of the learning process as the subject matter the underlying pages are intended to promote. Even when considering the rapid rate of change, learning about the technologies currently available can only help prepare the student and the instructor for the technologies yet to come. Software developers know that their products can be complex, and attempt to build upon previous releases so that the client's knowledge of the previous version may be directly applied.

It would be impossible to consider all of the reasons why universities and faculty members either start or delay Web development. After carefully considering the factors unique to each situation, decisions about how to use these technologies in course development must ultimately rest with the individual course instructor. It will be the faculty member who will be primarily responsible for the creation, focus, content, design, and upkeep of the class Web page. Once the decision to move forward with a Web page is made, an appropriate starting point for development must be identified.

Logical Progression Paths for Educational Web Development

A typically recurring theme for initial Web page development is that instructors should start very small with a basic design that may be quickly completed. Small group or individualized instruction with good follow-up and quick, demonstrable results are crucial during this initial stage. For example, many course page design workshops being done for faculty emphasize initial page design, creation and publication during a one or two hour session. A second course, offered perhaps a few days later, then builds upon the first session by providing additional instruction to create easily enhanced functionality.

During and after the initial training, instructors need to have continued access to the same level of software and hardware initially used during training. Ongoing support should include access to personal computers that are properly connected and configured with a standard set of utilities supported by the institution. A non-public practice environment, and ongoing access to technical support staff who are able to resolve technical issues that will inevitably arise, are also crucial. Once instructors begin to develop web building skills using the training that they have received, defining a longer-term logical progression path will help faculty move toward independent development.

Planned phases of Web development extrapolated from naturally progressive steps of learning are familiar to the instructor's environment and will provide the most comfortable, creative, and productive development atmosphere. For example, rather than extending the process of initial development through an entire semester to develop a comprehensive set of Web pages, developing an initial brief page in the month before the target class begins may be more beneficial. A small low-cost initial page provides the instructor with an initial test-bed to accept peer and student feedback, while keeping the initial focus on a page that can be easily changed as well as fundamentally redesigned. While the actual phases of development are often heavily dependent on the instructor's individual environment and supported development tools, a useful model for logical progression might include the following steps:

Phase One: Experimentation

Phase Two: Template

Phase Three: Redevelopment

Phase Four: Innovation

These phases could be set out formally set out as part of a structured training program, or informally as an on-line series of tutorials. Whether these phases implemented as part of a structured training program or as general guidelines, their function is essentially the same. Each of these phases brings the instructor closer to the goal of a Web page that serves needs of the students in the class in an informative, interesting, and professional manner.

Experimentation

In the initial stage of Web page development, experimentation is of primary importance. Page authors must feel free to investigate the tools they are using without fear of harming production data, their machines, the central server, or any other component in this environment. This phase of initial experimentation and discovery also should be offered in an private environment in order to prevent the anxiety that initially exists when Web pages are published for the world to see.

Experimentation is also very important because today's advanced, feature-rich Web development tools require a considerable amount of open investigation before the power of their functions becomes readily apparent and can be used with skill. Once instructors have become confident with the technology, the next step, using templates in Web development, can begin.

Template Development

One of the apparent problems instructors have designing Web pages is getting started with an initial design from a blank screen. What is the theme of the page? How is information organized for easy navigation? What kind of information is displayed or collected? How do other instructors use the Web to teach their classes? Fortunately, using the course template as a starting point resolves each of these

issues. The course template usually involves a predefined skeleton or "shell" which the instructor can modify provided the content meets established university guidelines. Selection of specific starting templates may vary by department, course, or individual instructor.

Course templates often are designed in a degree of levels, starting with simple text and graphics and progressing in complexity through demonstrations of some of the more advanced functions of the server. The best approach may be to steer the beginning instructor toward a more basic template, later introducing the advanced functions of the server using a "toolkit" approach. Keeping the initial design focus on basic functions allows instructors to build a solid foundation without the concerning themselves with the complexities advanced server functions inherently bring.

Redevelopment

Instructors may move very quickly between redevelopment and innovation, especially if their initial experimentation and use of templates has given them a high comfort level. The process of redevelopment includes two major goals. First, instructors begin to look beyond the "cookbook" approach of the template to develop pages more reflective of their own teaching style and course development needs. Secondly, the instructor will generally attempt to recreate many of the course functions and concepts within the web page. For example, essential course concepts contained in outlines, lecture notes, and results of classroom discussions are likely to be reproduced in Web form. Important administrative functions such as practice quizzes, course calendars, and discussion areas are advanced examples that may require advanced design preparation and support, as they require user interactivity as opposed to displaying static information.

Finally, knowing about the opportunity for a "redevelopment" from the start allows the instructor to operate less critically in the initial phases of development. From this point of view, the redevelopment phase can be marketed to faculty as a time to reexamine what has been created up to this point and switch direction if appropriate.

Innovation

Innovation provides the gateway for unlimited high-end Web development and brings the development cycle full circle. Moving past templates and page redesign, innovation is concerned with development at the next level, often encompassing interactive pages that engage student input and interaction.

Before instructions advance into these areas however, it is important that they receive ongoing guidance in understanding the difference between *technological innovation*, and *educational innovation* however. While there is no bright line separating the two, looking at new technologies from a critical viewpoint will help eliminate poor technological choices that serve more to demonstrate technological wizardry than contributing to the teaching and learning process. What may first appear to be "innovation" may forestall an otherwise successful development effort; embracing new technology too quickly or without proper planning leads to dead-ends that make recovery difficult. For example, a reasonably complete and well organized course page may quickly become bogged down by excessively large and cumbersome graphics, unnecessary use of movies or other high-bandwidth applications, and tools requiring students to download and configure advanced "plug-ins" before the page can be seen. The danger is that using the leading edge technology does not necessarily produce leading edge students; technologies should be selected based on an impartial evaluation of how they engage the learner opposed to other less complicated and universally compatible solutions. The development tools and resources that promise the most exciting web development opportunities cannot be applied successfully unless their use is part of a larger institutional plan which provides for their large-scale integration. For example, at the present time connecting Web pages to databases stored on mainframes or other large computing systems requires extensive setup of back-end facilities by dedicated computer professionals.

How can new technologies be effectively integrated while avoiding these pitfalls? One successful approach has been to develop a supported "toolkit" of higher-end supported tools which instructors may use to develop advanced page functions. The "toolkit" approach is an effective way of introducing new technologies which heading off rogue directions that can slow the development process. When instructors are ready to venture past templates towards innovative pages of their own design, providing them with a set of advanced tools which have been tested and are supported within the organization. For example, new graphics design packages that can be used to create three-dimensional images are becoming widely available and have advanced to the point that they are not prohibitively difficult to use. Developing a workable support strategy for all of the available packages however would be impossible. Even attempting to support the top ten packages would likely be a tremendous drain on institutional resources given the disparity between the various packages. In contrast however, selecting the best one or two packages and making them readily available to instructors as part of a supported toolkit provides a more workable solution. As instructors justifiably demand greater support for functionality, the toolkit can be expanded to include appropriate resources to fill those needs without overextending the support staff. Advanced workshops and introductory training for these supported packages then becomes more manageable. In order for a the "toolkit" approach to work effectively, institutional support staff must take an active role in supporting the products included in toolkit as well keeping the toolkit updated to reflect advances in technology and required additional functionality.

Conclusion

The World Wide Web has become and will likely remain an increasingly important medium for supplementing and even delivering course content. Although the Web we have today is the product of very recent technologies, many of the problems educators' face in effectively using the Web today parallel the problems experienced using the "new" technologies over ten years ago. Overcoming the many potential roadblocks that stand in the way of successful Web development requires educators to work in close cooperation with the administrators and technologists responsible for developing the underlying infrastructure that makes the Web possible. Notwithstanding the many reasons propounded for delaying development, now is the time to move forward even if on a small scale. Once the decision has been made to move forward planning deployment using the naturally progressive steps of experimentation, use of the template, redevelopment, and innovation will provide instructors with a comfortable and productive development environment. Using the "toolkit" approach for bringing new technologies into the development environment will help head off rogue directions while providing a manageable support path.

Call for Editors

Mid-Western Educational Researcher

Journal of the Mid-Western Educational Research Association

Proposals are currently being sought for the Editorship of the *Mid-Western Educational Researcher*. The *Researcher* is the quarterly publication of the Mid-Western Educational Research Association, with the summer issue of each year serving as the annual meeting program. The journal serves the dual function of providing MWERA members with timely information about the organization and of providing a vehicle for dissemination of scholarly work in education or education related fields. This dual mission reflects the growth and change of the organization itself in recent years.

The three-year appointment of the current editorial team will expire in October, 1999. The appointment of the next editor or editorial team will be from October, 1999, through October, 2002. However, it is anticipated that selection of the new editorial staff will be made in sufficient time to allow the new staff to work with the existing staff during much of the 1998-99 year. Proposals are sought from individuals and teams interested in assuming responsibility for the operation and direction of the *Researcher* for a three-year period. The format for proposals is open, but each proposal should include at least the following:

1) Name, institutional affiliation, address, telephone and FAX numbers, and e-mail address of each member of the proposed editorial team;
2) A vision statement indicating the editorial team's intended goals for the journal, and an explanation of how this vision reflects the membership, perspectives, and direction of MWERA;
3) A proposed plan for promoting this vision; and
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Proposals should be submitted no later than October 1, 1998, to the President of MWERA, Dr. Kim Metcalf, at:

Dr. Kim Metcalf, Director
Indiana Center for Evaluation
Smith Research Center, Suite 174
2805 East 10th Street
Bloomington, Indiana 47408

Questions may be directed to Ms. Rebecca Gross, Administrative Assistant, at (812) 855-4438, FAX (812) 856-5890, or e-mail: iuice@indiana.edu.

1357

Enhancing Elementary Curricula through Internet Technology

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Abstract

Radical advancements in Internet technology over the last decade have created endless opportunities to expand the realm of the elementary classroom. The World Wide Web (WWW), e-mail, Newsgroups, and Internet Relay Chat (IRC) are four of the most prominent utilizations of Internet technology. This paper demonstrates how one mid-western, suburban elementary classroom has enhanced its curriculum and improved classroom interaction by maximizing Internet technology. In addition to reviewing the merits of this case study, the reader will also: (a) be presented with a rationale for utilizing Internet technology with existing curricula, (b) examine the current debate on the issue of networking schools, (c) compare and contrast the pros and cons of utilizing Internet technology in elementary classrooms, and (d) consider the coalescence of curriculum and technology. An overview regarding the current application of Internet technology in an elementary setting highlights its true benefits: students conducting research on a topic of interest, communication and collaborative projects between students around the world, and the opportunity for students to publish original work.

Technology and Cognition

Tremendous enthusiasm presently exists toward the networking of school classrooms and the coalescence of curriculum and technology. While many critics have labeled this current educational trend as nothing more than an "expensive infatuation with the Internet" (Banks & Renwich, 1997), others view this emerging technology as an opportunity to motivate students to participate in the learning process.

Over the years, educational theorists have recognized the role technology plays in fostering human intelligence. David Olson (1976) noted that "intelligence is not something we have that is immutable: it is something we cultivate by operating with a technology, or something we create by inventing a new technology." This view can be summarized by saying that the role of technology is to act as both an extension of, and a stimulus to, human cognition (Sewell, 1995). Seymour Papert's work, culminating in his influential book *Mindstorms*, visualized a role for computers and technology that emphasized "breaking down the barriers that frequently exist between differing areas of the curriculum, as revolutionizing the nature of learning, and as lowering the threshold of the abstract" (Papert, 1980).

If the current application of Internet technology is only viewed by the elementary teacher as a means of providing remediation and enrichment, a tremendous opportunity to challenge young mind's will be lost. "Classroom computers can change children's minds, but to do so they need to be used by teachers who do not view computers as surrogate teachers so much as tools with which their own educational goals can be reached" (Underwood & Underwood, 1990).

Nora Sabelli, of the National Science Foundation, said it best: "The Net's main value will be breaking the isolation of the classroom by allowing children to talk to experts, exchange ideas, and tap into real time information" (Kronholz, 1997). This attitude reflects a growing rationale toward utilizing such technology in an elementary setting. Without doubt, Internet technology has the potential to serve as the mediating factor between the learning environment and the acquisition of human intelligence.

Case Study of a Mid-Western Suburban Elementary School

A case study was conducting during the 1996-1997 school year in a rapidly growing mid-western, suburban elementary school. The case study specifically examined a fifth grade classroom that was utilizing Internet technology to complete a variety of classroom projects. The school selected for this study is one of six elementary schools networked to both a middle school and high school within the school district. The school district budgeted and completed a massive capital improvement project that involved networking all of the school buildings. This project included the purchase of a network file server, as well as, contracting the installation of fiber optic cable between all buildings within the district. The school examined in this study was outfitted with two, thirty-unit computer laboratories that utilize Macintosh Power PCS. Both laboratories were equipped for Internet applications, in addition to providing an Internet connection for each classroom computer (one per room).

A survey conducted at the beginning of the school year revealed that sixty-four percent of the students assigned to

1358

this classroom had previous experience with the Internet. Forty-three percent indicated that they had access to the Internet in their home, while only twenty-five percent of this group indicated that they had previously used the Internet to complete research on a school project. Eleven percent of the students from this classroom indicated that they had no prior knowledge of the Internet and were being introduced to Internet technology for the first time.

The teacher involved with this case study received extensive training in educational technology as a pre-service teacher. However, the pre-service training was void of any Internet experience. The teacher indicated that Internet experience was acquired through personal interest, beginning with the teacher's enrollment through an Internet Service Provider (ISP) in October of 1995. Since that time, the teacher had completed some formalized training related to Internet technology.

Some of the applications observed during the study included: (a) utilizing a variety of Internet search engines to retrieve biographical information on notable individuals of the twentieth century, (b) downloading a variety of images to be printed in color and later displayed in a student project, (c) accessing weather satellite images to make predictions regarding the daily weather forecast, (d) linking to a variety of educational sites that provided specific information regarding both social studies and science topics (e.g., Colonial America, global warming, etc.), and (e) sending and retrieving e-mail (e.g., electronic pen pals). Prior to being allowed to utilize any Internet application, students had to complete a school permission slip (that was signed by a parent) acknowledging that the school district's policy regarding Internet access had been reviewed with the child.

Tremendous enthusiasm was noted in regard to students completing research on assigned topics. Many students, who earlier demonstrated a dislike for completing research, were extremely active in the retrieval of information related to a specific topic being discussed in class. A small percentage of students found the exercise to be frustrating and opted for a more conventional approach to completing their research (i.e., utilizing an encyclopedia).

While the overall effectiveness of applied Internet technology is inconclusive in this case study, there were several positive benefits noted. The majority of students were actively engaged in research for an extended period of time. Students displayed an ability to work independently of the teacher, requiring only minimal assistance while conducting "Web" searches. Finally, students were able to incorporate much of the information gained from their Internet search into a final written report (i.e., a biography of a notable person from the twentieth century).

The Current Debate on Internet Technology

The debate over networking schools and providing Internet access to all students is complicated by a number of political and economical issues. President Clinton recently escalated the debate by committing fifty-seven million dollars toward "technology literacy grants", aimed at assisting poor school districts that lack the fiscal resources required to "hard wire" their buildings. The Clinton Administration has also pressured the Federal Communications Commission (FCC) to "establish a 2.25 billion-dollar Universal Service Fund, which will link schools across the country to the Internet beginning in 1998" (Associated Press, 1997). President Clinton has further promulgated Internet access in schools by encouraging school districts to consider volunteer labor as an alternative to contracting the labor required to hard wire a building. Clinton views such a community effort as "an old-fashioned barn raising [when] neighbor joins with neighbor to do something for the good of the entire community" (McAllister, 1997).

Critics are quick to point out that regardless of the amount of money offered through federal and state agencies, the Internet will remain only a promise, and not the panacea that people predict. Critics point to a National Study conducted by the Rand Corporation of Santa Monica, California. The Rand Corporation study concluded there was no significant evidence to justify "networking" all of the nation's schools and that computers as a whole "remain marginal contributors in most schools". Sandra Banks and Lucille Renwich (1997) noted three obstacles to achievement: (a) a high price tag, (b) lack of teacher training, and (c) no consensus on best use. In a June 8, 1997 article appearing in the *Los Angeles Times*, Banks and Renwich noted that only a small percentage of successful, Internet equipped schools exist. One such school, Blackstock Junior High School in Ventura County, California has shown tremendous success in student achievement attributed directly to the coalescence of technology and curriculum. This success is marred by the tremendous cost associated with their success. For example, Blackstock Junior High School invested three billion dollars over a ten-year period. During this time, teachers were given a year off to receive training in the appropriate application of Internet technology and the school's curriculum was completely overhauled to included Internet requirements. To maintain their success, the Blackstock Junior High School currently operates with a technology budget in excess of $380,000 a year (Banks and Renwich, 1997).

The outcome of this debate is undecided. Many leaders in the field of education question whether the enormous cost to provide the hardware required for Internet technology is really worth the investment. Adding to the enormous price tag is the realization that only five percent of current funding goes toward training teachers in the use of this technology. Only eighteen states presently require pre-service teachers to receive training in Internet technology, and of these eighteen, only five require that veteran teachers receive training prior to renewing their teaching license (*Wall Street Journal*, 1997). Without conclusive evidence on the effectiveness of Internet technology in the elementary classroom, many educators question whether money is being wasted on an expensive experiment. Nevertheless, Stuart

1359

Biegel, Professor of Education and Information Studies at the University of California, Los Angeles (UCLA), poses an interesting question: "It is a step into the unknown, no question about it. So the question is, do we take the step or do we sit back and let somebody else do it?" (Banks and Renwich, 1997).

Biegel's remarks demonstrate the reality that supersedes any debate. Internet technology is here to stay. It will continue to work its way into the elementary classroom and curriculum. Rather than wasting time debating its cost effectiveness or its merit as an instructional tool, the debate should be muted in favor of developing this emerging technology into an effective teaching tool.

Implications for the Future

A review of educational research leads one to conclude that the true obstacle to realizing successful integration of Internet technology and elementary curricula lies in the fact that "past staff development programs have not focused on the specific instructional computer skills needed by teachers to integrate the Internet into classrooms" (O'Donnell, 1996).

In the book, *Integrating Computer Into the Classroom*, Edith O'Donnell notes the need for "a new philosophy". This new philosophy must fulfill three purposes: (a) recognize that just placing computers with Internet access into classrooms is not adequate for integration, (b) recognize that teachers wish to integrate Internet technology, but do not know how, and (c) recognize that present in-service programs are inadequate for widespread integration of Internet technology into the classroom. Teachers must gain the necessary instructional strategies to go beyond hands-on computer skills to teacher-driven instructional strategies that provide confidence and enthusiasm to inspire utilization of Internet technology in a whole class environment (O'Donnell, 1996).

Summary

The marriage of Internet technology and elementary curricula holds the potential to change the way students look at learning. Teachers and their students need to move from planned learning to authentic experiences; Internet technology provides the means by which we can influence that change. Internet technology, properly applied, holds the potential to help students not only to prepare and complete assignments, but integrates experience and subject matter. Used properly, the Internet can act as a stimulus for the discussion and exchange of ideas. The Internet can also provide for individualized instruction, an ideal that educators continually advocate. Finally, the Internet encourages interactivity, promoting active learning between students of all ages and abilities. The Internet is not just a technology for presenting material to be learned, nor is it just an outlet for students to express themselves, although both of these are roles the Internet can fulfill. It is both these and more.

While the utilization of Internet technology shows no more promise than conventional teaching methods (with regard to academic achievement) in the elementary classroom, the appropriate application of Internet technology can be responsive to differing learner characteristics, can provide authentic opportunities for application, and can motivate students to learn.

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1360

"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners

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Abstract

College faculty can minimize valuable time and resources invested in inappropriate technologies by staying in step with technological progress. A "future proof" approach to technology recognizes and welcomes small failures, considering them part of the ongoing process of absorbing technology into the learning process. "Future proofing" attempts to understand the factors that influence and impact technology upon learners. The factors that comprise the concept of "future proofing" include:

(1) market dominance solutions*: based on a strong market presence this often proves to be the single greatest factor in decision making;*

(2) ease of use*: users of technology prefer simplicity over functionality;*

(3) the best-practice approach*: since technology is a delivery medium, proven successful teaching and learning practices are likely to work when technology is added;*

(4) technology non-reliance*: users should avoid relying too heavily on the expertise of technical gurus;*

(5) least cost*: free software should be rigorously reviewed and users should plan on receiving limited or no technical support, since software freely available may disappear or fall victim to programmer neglect; and*

(6) best guess-roulette*: creative and effective solutions evolve from combinations of technology only possible from experimentation.*

Introduction

The use of technology has the potential of being the greatest single change agent effecting learners. A major problem individuals often encounter is choosing the "correct" technology. Faculty are faced with a multitude of equally compelling technologies having the promise of being the ultimate solution—**today**! The problem is not the lack of technical solutions available to solve problems, it is knowing where the rest of world is heading with technology. Ignorance with respect to where technology is heading can force countless hours of working and reworking solutions to the point that a paradigm shift deadlock will bring to a halt all creativity and productivity. Time is forever lost retooling thought processes and skills, not to mention the hard costs of revamping hardware and software. Unless one is fortunate to have unlimited resources available to forge new directions, it makes sense to stay technically in-sync-step with the rest of the world; only then is it financially viable for vendors to build solutions to your fingertips.

This begs the question, how does one determine where the rest of the world is heading? Do you determine the most popular technology by number of solutions sold? Do you determine direction based upon the ease of use of the technology? Do you rely on colleagues? Do you seek insight from local technical gurus? Do you seek to minimize your perceived risk by working with free or nearly free solutions. Or, do you spin the roulette wheel of technology only to find out you are playing Russian roulette?

Purpose

If you do not know where you are going, then any technological road will get you there. The purpose of this paper is to explore approaches that can help one avoid investing valuable time and resources into technologies that may lead into dead-end streets that discourage learners from pursuing knowledge through technology. All too often, technical solutions are chosen to solve immediate needs with little attention given to the critical evaluation of how best to integrate and leverage investments in existing infrastructures. To create technical life-long learners every effort must be made to avoid frustrating learners with short-term technological solutions. One sure way to discourage learners is to prevent them from building upon their existing knowledge base as they progress to the next level. The rate of change in technology today demands a tactical approach that anticipates and welcomes change. As new technologies are introduced, the capacity for change must be planned from the beginning or the learner will not be able to carry forward the skills learned from previous experiences.

How to "Future Proof"

The future is most difficult to predict. Technology is encroaching into every facet of modern life. The rapid change of technology can create a stranglehold on decision-making ability of the average teacher. Why would technophobic teachers ever make decisions concerning the use technology when the threat of totally starting over holds a death grip on their careers? Time is limited and failures are unavoidable. The only way to proceed is to develop a "future proof" approach to technology that recognizes and welcomes failure as the tool to help chisel away toward a solution that seamlessly absorbs technology into the learning process. Small failures can and should be recognized for what they are; small nudges guiding an individual to the best implementation of technology.

"Future proofing" is an art, not science; it can not guarantee immunity from failure. However it can provide a career insurance policy that inhibits the policyholder from making catastrophic decisions with respect to the implementation of technology. Each step in the "future proofing" process can be individually analyzed to clarify the critical components that makes that step unique in the process.

Using the above question, "how does one determine where the rest of the world is heading?", and spin off questions that logically follow, an will attempt will be made to identify the major factors in the "future proofing" process. Knowing how to "future proof" requires an examination of the factors that serve as the basis for this concept. Any factor alone has the power to swage the final determination of how best to prepare for the future.

Factor 1: Market Dominance

Depending on the degree of market dominance, solutions based on a strong market presence often prove to be the single greatest factor in decision-making. As a user of technology, it would be a relief to know there are other individuals coping with the exact same technical issues; there is safety in numbers. For example, Microsoft Word is the dominant word processing software package in the world today. If another vendor ever attempted to challenge Microsoft's dominance, they would have to develop solutions which provide compelling reasons to switch. In an attempt to sway Word users to another software platform, a vendor would develop migration strategies to facilitate the conversion of Word documents to a new format. If you were using a word processing package that had little or no market presence, then vendors would not be as willing to spend time or resources developing migration strategies. On a purely financial self-interest basis, vendors will develop and tailor solutions that meet the needs of the greatest number of users.

When it is not possible to clearly identify a market leader, it would make sense to choose a technology path allowing greatest freedom for migration in the future. For example, the Web browser war between Microsoft and Netscape for Web market dominance can be described as a virtual tie. In this situation it would be wise to determine the common technology between the two vendors' solutions and select a strategy allowing for a flexible migration path in the future. If this instance, if one were developing Web-based solutions, it makes sense to develop pages that are non-proprietary; pages that adhere to the Hyper Text Markup Language (HTML) standard. At a later date, once it is obvious who the market leader is, web pages should be able to be folded into the vendor solution with little trouble.

Factor 2: Ease of Use

Ease of use issues are related to the KIS (Keep It Simple) principle. Given the choice, users of technology would gladly surrender functionality in favor of simplicity. The simplest technical problem can quickly become an insurmountable barrier, preventing the teaching and learning process from occurring productively. Technologists and educators must be brought together and focus their energies on keeping the complexities from getting in the way of learning.

Strive for the highest common denominator in technology and functionality without sacrificing the message. To achieve the highest common denominator, a conscious effort must made to avoid using technologies that place the learner on the "bleeding edge". More often then not, the appeal to include flashing gizmos is often too compelling to resist and quickly becomes the focus of problems that create unnecessary barriers to the teaching and learning process. For example, the use of plug-ins and helper applications for Web based applications create instant configuration problems for learners as they try to adapt their browsers to the latest and greatest technology possible. Stay far enough behind the bleeding edge of the technology curve to provide the highest functionality possible with minimum user frustration and confusion. If you can not delivery the message, you are failing the learner.

Factor 3: Best Practice Approach

Successful teaching and learning practices that have worked in the past are good indicators of what may work in the future when technology is added. Technology in most situations is just a delivery medium, the message often remains the same. What has changed is how the message is delivered and way the learner interacts with the new medium. Technology in itself is not the means to create technical life long learners, it is how the technology is applied to the learning process that counts! Technology, properly applied, has the potential of creating new pathways to dynamically engage the learner.

The converse is also true; poorly applied technology can discourage the learner and make the learning process much worse than if nothing were done at all.

In real life situations, unexpected failures often arise when applying new technology to traditional education processes. What really matters is how you apply the technology. Failures are part of the struggle and should be used as

learning opportunities to gain a better understanding of how to refine the best practice approach to create technical lifelong learners. We must constantly reevaluate, inquire, and collaborate on new approaches for the application of technology to learning, or we will never fully realize the potential technology has to offer. Continual experimentation and evaluation of the application of technology to learning will reveal how best to combine proven learning practices with new technology innovations. The application of technology is a work-in-progress, constantly changing and evolving. Determine what has worked successfully in the past and investigate ways to use the dynamic nature of technology to refine and improve desired learning approaches.

Factor 4: Technical Non-Reliance

Avoid relying too heavily on the expertise of technical gurus. Too often their focus is purely technical based, and the solutions offered are too complex to have any tangible benefit to learners. Technical applications for the sake of technology sizzle are surely going to frustrate and change the focus from learner based solutions to excesses in frustration. Always temper the advice from technical people with questions like: What will this give me when I am finished? How long will it take to implement? Who do I call when I have problems? How much does this cost?

Input from technical experts is absolutely necessary in the development of technical lifelong learners. However, a little technical input can mutate what was a learning opportunity to a computer science project where programming, software installation and complex configurations are required. Constant evaluation of the initial goal must occur to guarantee the application of technology is improving the learning process.

Factor 5: Least Cost

The success of the World Wide Web (WWW) can directly be attributed to software that has been freely available on the Internet. Mosaic, Netscape and Internet Explorer are examples of free WWW browsers that have revolutionized the delivery of information. The initial lure of assembling learning solutions using free or nearly free software should be rigorously reviewed before foundational decisions are made effecting future directions. Software freely available today, may instantly disappear or fall victim of programmer neglect. When assembling free software, plan on receiving limited or no technical support from the author or vendor.

Factor 6: Best Guess—Roulette

The best guess approach often leads to failure; but by eliminating possible solutions one can work toward the correct solution(s), one failure at a time. This approach can be costly in terms of human resources as well as hard costs in computing equipment. As illogical as this approach may seem, innovative applications of technology can emerge from experimenting with varied and dissimilar learning technologies. Creative and effective solutions evolve from combinations of technologies only possible from experimentation.

Summary

The "future proofing" concept is a learner-based strategy designed to help faculty keep pace in the rapidly changing world of technology. Unanticipated change can result when one is not aware of technological solutions and their potential impact on learning. Staying abreast of technology requires an investment of time and the capacity to accept failure as a positive influence. Realizing technology has become an integral component of the educational process; technology awareness and skills are absolutely essential for faculty and learners to be prepared for the 21st century. "Future proofing" is an approach to understanding the factors that influence technology, and hence, the impact technology has on learners. As new technologies enter the education scene, always keep the focus on learning. Is the technical enhancing the learning process?

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Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm

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Abstract

Technology as a tool used to enhance instruction must be viewed in its proper perspective. Instruction via distance learning is an excellent example. Instruction must be appropriate for the intended audience, and must be observed and evaluated within the expectations of criteria used for evaluating effective teaching. Traditional criteria may be appropriate for evaluating regular classroom instruction, but not appropriate for distance learning instruction. Criteria such as "wait time and questioning techniques," are well documented, but were derived through tedious observation and recordings of repetitive behaviors within a regular classroom. As an administrator or evaluator observes in a classroom where instruction is being delivered via television, consideration must be given for adaptations that must be made for observing the distance learning classroom. Observation training in the distance learning classroom will be tedious, but new examples and innovative ways of documenting teaching behaviors are needed. The authors present a case for the development of new criteria for evaluating distance learning instruction.

Introduction

Paradigms used in the observation and evaluation of regular classroom teaching may not be applicable when observing instruction via distance learning. The body of knowledge gleaned from the research on effective teaching when applied to teaching on television may simply not fit. At the very least, teacher behaviors tried and tested in a regular classroom will need modification if they are to be successful in distance learning. This is especially true when the teaching is to be performed in a *one-way video* mode. In this mode, the student must assume more of the responsibility for learning. Teaching on television is usually conducted in a one-way video—two-way audio, or two-way interactive video format. This article deals with the key issues that are essential to quality instruction via distance learning. As teaching and learning address the urgency of the technological explosion, compatible accommodations must be made for impending changes.

Instruction via distance learning needs close scrutiny and critical evaluation as it holds the potential to change teaching and learning. Although the costs may be prohibitive, the impact for teachers and learners is far too great to ignore. It is not a panacea; neither should it be dismissed with an attitude of this too shall pass!

Observation in the Distance Education Environment

Distance education is a distinguished system of education, distinguished from other educational forms by its separation in both time and place and by its teaching and learning acts (Rumble, 1989). The teacher is a very important element in the educational process, whether in a traditional classroom or in a distance education setting. One of the ways to determine the effectiveness of instruction conducted on a distance learning system might be to observe and document the characteristics and behaviors of distance learning instructors for comparison to the teaching behaviors found in the research on effective teaching. Specific teaching behaviors such as providing effective praise (Brophy, 1981), use of advance organizers (Ausubel, 1960) or frequency of reviews (Cruickshank, 1986) might serve as starting places. Questions about effective teaching might include inquiry into interaction such as: 1) how often does the instructor initiate interaction with each student, 2) how often do the students initiate interaction with the instructor, 3) how much wait time does the instructor give a student responding to a question, 4) how often does the instructor use advance organizers, *or* 5) how much time does the instructor spend in reviewing previous lessons? Questions like these might be more useful in an observation instrument for teaching on television than an instrument normally used in a regular classroom. An analysis of the amount of teacher dialogue compared to the amount of student dialogue or a determination of how much of the interaction the teacher initiated and how much the students initiated might also prove beneficial (Barker, 1988).

Several studies assessing student attitudes toward media and technology in the distance learning environment have been conducted (Allen, 1995, Bangpibob, 1995, and Bozik, 1995). Adult attitudes toward instructional technologies are positive (Dillon, Haynes & Price, 1990); however, other studies indicate student attitudes are influenced by their familiarity with the technologies employed (Riddle, 1990, Smith & McNeils, 1993). Teachers and learners must realize computers are not

1364

inherently interactive. They provide an excellent environment for discussion, but they are only interactive if students participate responsively and regularly (Eastmond, 1995). Kinzie, Delcourt and Powers (1994) found attitudes are important predictors of success and are critical areas for future examination. Distance learning students express a need to know classmates and a desire to interact with someone else in class (Egan & Sebastian, 1993). The practice most often mentioned by students in a description of outstanding electronic teaching practices was the practice of providing for student-to-student and instructor-to-student interaction (Western Cooperative for Educational Telecommunication, 1995). Clearly, an examination of instructional effectiveness must consider an assessment of student attitudes toward the learning delivery system.

Teaching strategies and course design influence student attitudes in a distance learning environment. Students are positive toward interactive teaching methods (Burge, 1994); however, their attitudes toward the impact of technological difficulties are negative (Riddle, 1990). Saba and Shearer (1994) found students felt connected and satisfied in a computer-facilitated interactive video classroom, yet felt isolated from the main class and saw themselves as passive observers in a video-only classroom. Keegan's comment might serve as a summation: Interactive learning environments have proven difficult to design and deliver; however, current instructional emphases must consider new interactive technologies if transactional distance between learners and instructors is to be bridged (Keegan, 1993).

The one-way video—two-way audio format necessitates conveying of information where the nonverbal dimension of teaching is missing for the most part (the student can see the teacher, but the teacher cannot see the student). The role of the teacher is radically altered. The teacher must make illustrations by describing or by creating verbal pictures for the students. Pinney's research (1969) found that without the opportunity to see the student, the teacher must prepare the students in such a way that they assume more responsibility for their own learning. Usually, there is no opportunity for immediate clarification as one would do in a normal classroom setting. This represents a major adjustment if the teacher uses a research based teaching approach.

Preparing the students to learn is an essential element in effective teaching. The beginning of the class is an important time. First impressions tend to have lasting effects, and teaching at the beginning of the period might be much more influential than the instruction taking place later. The beginning of class is one of the most critical teachable moments. The teacher must take this into account and work diligently to get the students ready to learn (Hunter, 1982).

Whether one uses Hunter's anticipatory set or some other term, how the teacher addresses learning at the beginning of the class period is extremely important. If this thinking were extended throughout the duration of a particular course then one would be well advised to model the appropriate behaviors early in the school year or semester. Opportunities to teach through modeling are greater at this time because rules and procedures are amenable to change (Doyle, 1986).

Setting the stage for learning when one is teaching on television becomes much more demanding of the teacher in terms of details that must be addressed. The flow of instruction must be planned in advance with materials and other strategies that do not require student interaction during the class period. The teacher must prepare visuals to illustrate processes that he/she might use to enhance learning. With the student role in learning largely dependent on the learner, the teacher will encounter difficult problems if the student has a motivation problem. This is true for any type of teaching situation, but teaching via distance learning formats tends to exaggerate the problem. Perhaps a more realistic approach for observing/planning and organization for instruction over a one-way video—two-way audio format would be to examine the materials themselves and try to determine the intent of the teacher. Observation could then discern if the teacher's intent were effectively reached. While preparation for teaching without anticipating student interaction may be necessary, the teacher would be well advised to plan for student interaction as much as possible. This may necessitate class assignments where the students are required to interact with each other via computers, or telephone or with materials the teacher has provided. Either way, the preparation for such occurrences will greatly enhance the chances for them to actually materialize. In some distance learning situations, teachers use chat rooms or newsgroups where the students interact via the computer between the times classes meet. When students log on, their messages are recorded and the teacher is able to make some assessment as to how much interaction is actually occurring.

Effective teaching includes modeling on the part of the teacher. When one is observing instruction on television, an appropriate behavior might be to look for the teacher's illustrations or demonstrations, or modeling behaviors as they are displayed for the students who sit in the studio where the televised teaching takes place. Interviews with T. Wiedmer & J.C. Thompson, Jr., university teachers who have taught on television, verify that students have the advantage of the verbal and nonverbal dimensions of the teaching act and are able to discern and communicate more clearly than those at distance sites (Personal Communication, Spring, 1997). Thus a criterion for observing teaching on television might be to determine how well the teacher utilizes the students who are present at the programming site for demonstrating teaching points he/she wants to make. How does one observe for overlapping behaviors on the part of the teacher on television? One suggestion might be for the teacher at the beginning of the class to start a review session by directing a question to the entire class; take the roll, or pass out papers (perhaps through a fax machine) while the students are thinking about the answer (wait time), then call on a student whom the teacher thinks will answer. By utilizing strategies like this, the teacher can conduct the review and take care of housekeeping chores at the same time. The stage is set for the students to think about their answers and compare them to the one given by the student called upon. In this way, unvoiced misunderstandings or incorrect answers can be corrected without visibility or embarrassment. On television this teaching

situation will need to be modified to utilize the students who are in the studio to model the behaviors sought by the teacher.

Modeling behaviors that teach desired outcomes might be observed as intentional or unintentional on the part of the teacher. How the teacher models respect for the students in the class sets the stage for how the students treat each other. In an attempt to explore the impact of invitational teaching practices on underachieving and apathetic teacher education students, Lange (1988) found a positive correlation between the invitational teaching techniques and increased positive experience for each student in the study. This study was an overt attempt to look at positive modeling behaviors and their impact on students who were disenchanted with their choice of a career. Students do not easily discern intentions unless the teacher exhibits overt behaviors. Overt teacher behaviors that are designed to enhance student motivation and attitude should be included in any evaluation paradigm of teaching on television.

A research based teaching model indicates the need to check for understanding. In the one-way video—two-way audio format, opportunity to check for understanding might not be as applicable at the moment the teacher needs it as it would be in the regular classroom. The teacher therefore must make opportunities for this crucial step in the teaching process. Student interaction in distance learning situations is often accomplished via telephone or computer via telephone lines. If the students are to utilize the telephone to interact from distant sites, elapsed time may be dependent upon the number of lines accessible to the students. Further, responsive telephone calls by students may consume so much time that the question or comment becomes out of place in the sequence of interactive events. Without the opportunity to check for understanding at the most opportune time, the teacher may not be as aware of the student's comprehension of the content or processes being taught and may be unable to adjust the instruction for optimal learning.

Programs which permit only selected on-line classes to call in can hardly pretend to be interactive when a majority of their students are simply watching a one-way TV instructional program that does not allow them to call-in, ask questions, or make comments. Another factor is whether or not students at a receiving site would be able to be on-line with students at other receiving sites at the same time, thereby enabling not only teacher/student interaction but also student/student interaction (Barker, 1988).

Effective use of time is a variable necessary for successful teaching; however, when one observes teaching on television, there is the realization that the use of time must be evaluated differently. When the teacher asks a question, three to five seconds of wait time is well documented in the literature (Rowe, 1996), but this is not realistic in a distance learning classroom. An adjusted expectation might well be as long as ten seconds or an adjusted definition of wait time might be developed to include student/teacher interaction via telephone. The obvious question arises, however, that if wait time must be extended, how does a teacher cover the necessary learning material needed in the course? Or, if the teacher adjusts and makes decisions to concentrate on more essential elements of the content, who participates in the decision as to what is essential? These are typical of the decisions teachers have to make (Hunter, 1982).

Interviews with teachers who have taught on television indicate it is not possible to process material initially, but teachers adjust over time and tend to acclimate to the demands of teaching on television. With practice and experience, improvement can take place. Strategies drawn from the research literature that might be applicable here include: 1) repeating content three or more times at *spaced intervals* results in content retention (Jersild, 1928); 2) *Proactive markers* such as "look at this", "watch me", or "now get this" increase retention also (Ehrensberger, 1945; Petrie, 1963; and Maddox and Hoole, 1975).

Teaching in a distance learning format that is one-way video—two way audio presents a different situation from that of the normal classroom. A study of communication always includes a discussion of how much of a spoken message is received and decoded through the nonverbal gestures or nuances that accompany it. Estimates range as high as 93% of a spoken message is received nonverbally. Teaching on television in a passive one-way video system mandates that the teacher must convey information or processes in a medium that restricts the nonverbal dimension of the communication process. In observing teaching, it is common to view a series of communication exchanges that result in teacher and student behaviors that can be codified. The observation may be accurate only to the extent that the observer has the opportunity to summarize the complete exchange. In observing teaching in a distance learning format, the observer will not have access to complete verbal and nonverbal exchanges and may have to extrapolate or hypothesize occurred. This raises the potential for differential and/or erroneous interpretation.

The role of the student in distance learning is quite different from that of a live classroom. The student must cope with the technology to be able to participate in class assignments. Students must assume more responsibility for their own learning. Perhaps this is the greatest real gain. Collaboration with the teacher to increase learning is essential in any learning situation. However, when the medium is a passive learning format like distance learning, both the teacher and the learner must exert more effort. Precision of language used by the teacher when a concept is introduced and defined is important, but when examples and non-examples are given, it becomes critical. It should be noted that concepts are attained more completely when both examples and non-examples are provided (Tennyson, Woodley, and Merrill,1972).

Learning is enhanced when the teacher states each concept, law, or rule clearly. This might be accomplished by defining or stating the components, explaining in a language from which the students can profit or in such a way as to allow the students to demonstrate either by example or analogy. When students have opportunities for guided and independent practice, achievement is enhanced (Klausmeier, 1976). In 1979 Anderson, Evertson, and Brophy found a strong correlation between the number of minutes spent in guided practice (where

a large number of questions were asked) and achievement. They also found a positive correlation between student achievement and the number of responses, suggesting interactive student practice at a brisk pace. Rosenshine and Stevens (1986) found that correctives and a high percentage of correct responses provided during guided practice are essential. The question then becomes: How does the teacher give guided practice in a distance teaching/learning format?

Independent practice used to extend content that has already been taught is a sound research based teaching practice. It usually involves two stages: 1) working on the first few examples or questions, and 2) when students have mastered the material and are working on reinforcement (Samuels, 1981). In the first stage, instruction is focused on the teacher's behavior and is usually a direct instructional situation. An ineffective teaching behavior that is often observed when students ask questions about material that has just been presented is that the teacher often repeats the first example that was used to explain the concept. Not only is the example repeated, it is often repeated more slowly, loudly or precisely. This practice is ineffective because the teacher is emphasizing an example that the student did not understand the first time it was presented. It is exacerbated by the fact that the teacher repeats it slowly and often more loudly as if to emphasize that the fault lies with the student and not the example. It is the wise and skilled teacher who recognizes this situation and shifts to another example while assuming the responsibility for the student not understanding. Frayer (1970) found that a few well-chosen examples were better than numerous examples and the number of examples that a teacher uses may not be as significant as the quality of examples given.

In a distance learning format, the teacher will be hard pressed to incorporate independent practice while the lesson is being taught. Learning then entails work or practice beyond the classroom. Teaching on television can be greatly enhanced by use of computer-assisted interaction. Riel (1993) found computer-mediated communication raised cross-cultural awareness. Social interaction is increased (Johnson-Lenz & Johnson-Lenz, 1993), writing skills are enhanced (Paulsen, 1992), knowledge construction and thinking are facilitated, and independent learning strategies are developed (Mason & Kaye, 1989). However, lack of visual cues can also inhibit depth of communication (Selfe & Meyer, 1991). From these studies an evaluation of teaching on television, especially when the evaluator is trying to assess independent practice, clearly must attempt to assess activities that occur beyond the classroom and between times when the class meets. Interaction between students outside the classroom may be a direct reflection of the teacher's action during classtime.

Summary

Instruction via distance learning is a widespread practice among educational institutions. It is utilized for upper level classes at the high school level to provide opportunities for students who plan to pursue higher levels of study. Colleges and universities use distance learning for a variety of instructional purposes from delivering classes within state borders and between states nationwide to video conferencing that might have international hookups. The explosion of technology has served to remove the barrier of distance for access to learning. The speed with which electronic signals can transmit information has permeated nearly all areas of society; education is no exception. Technology is here to stay and its implications for instruction stagger the imagination.

An issue of distance learning that must be considered is the quality of the instruction and learning that takes place. The research on evaluating instruction via distance learning formats has been largely confined to analyses of self-reported data from participants. Careful observation with well researched criteria are needed to evaluate the effectiveness of distance learning instruction. The research on effective teaching is a body of knowledge that has been accumulated largely in traditional classrooms. The distance learning site is not a traditional classroom as far as teaching and learning are concerned, and the traditional criteria utilized for observing and evaluating teaching are not appropriate for observing and evaluating instruction via distance learning. As evaluators use the results of research on effective teaching and apply them to distance learning instruction, modifications of existing criteria need to be made. There is also a need for new criteria that are more compatible with distance learning environments.

Student attitudes toward learning are especially important for success in a distance learning situation. The teacher and learner must possess a degree of confidence and comfort with the technology. When the nonverbal dimension of teaching is missing, the preparation for instruction is different and must focus more on created visual images rather than direct observation.

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Index of Authors: 1998

The Index of Authors and the Index of Articles are alphabetical listings of MWER articles from 1998 indicating the issues where they can be found.

Molly Herman Baker, Western Illinois University
Technology and Teaching in the Communications Age, Volume 11, No. 1, Winter 1998

Mary K. Bendixen-Noe, The Ohio State University, Newark
Nontraditional Students in Higher Education: Meeting Their Needs as Learners (Research Alive), Volume 11, No. 2, Spring 1998

Connie L. Bowman, University of Dayton
An Exploratory Study of the Level of Reflection Attained by Preservice Teachers, Volume 11, No. 2, Spring 1998

James B. Boyer, Kansas State University
Diversity Issues in Educational Research, Volume 11, No. 1, Winter 1998

Duane O. Eddy, Ball State University
Successful Implementation of Technology into the Educational Process, Volume 11, No. 4, Fall 1998

John W. Fraas, Ashland University
Changes in the Personal and Teaching Efficacy Levels of Teachers Exposed to the FOCUS Model, Volume 11, No. 2, Spring 1998

Maria Elena Galvez-Martin, The Ohio State University at Lima
An Exploratory Study of the Level of Reflection Attained by Preservice Teachers, Volume 11, No. 2, Spring 1998

Carmen Giebelhaus, Ohio Department of Education
Nontraditional Students in Higher Education: Meeting Their Needs as Learners (Research Alive), Volume 11, No. 2, Spring 1998

Theodore J. Kowalski, Ball State University
The Role of Communication in Providing Leadership for School Restructuring, Volume 11, No. 1, Winter 1998

Jack Levin, Northeastern University
Violence Goes to School, Volume 11, No. 1, Winter 1998

Loren D. Malm, Ball State University
Appropriate Educational Applications of the World Wide Web Today, Volume 11, No. 4, Fall 1998
Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web, Volume 11, No. 4, Fall 1998
Enhancing Elementary Curricula through Internet Technology, Volume 11, No. 4, Fall 1998
"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners, Volume 11, No. 4, Fall 1998
Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm, Volume 11, No. 4, Fall 1998
Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment, Volume 11, No. 4, Fall 1998

Bobby G. Malone, Ball State University
Appropriate Educational Applications of the World Wide Web Today, Volume 11, No. 4, Fall 1998
Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web, Volume 11, No. 4, Fall 1998
Enhancing Elementary Curricula through Internet Technology, Volume 11, No. 4, Fall 1998
"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners, Volume 11, No. 4, Fall 1998
Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm, Volume 11, No. 4, Fall 1998
Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment, Volume 11, No. 4, Fall 1998

Sharon McNeely, Northeastern Illinois University
Learning About Sex: The Missing Paradigms and Challenges to Educational Researchers (Presidential Address 1997), Volume 11, No. 1, Winter 1998

Margaret A. Morrison, Hilliard City School District
An Exploratory Study of the Level of Reflection Attained by Preservice Teachers, Volume 11, No. 2, Spring 1998

Fred W. Nay, Ball State University
Appropriate Educational Applications of the World Wide Web Today, Volume 11, No. 4, Fall 1998
Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web, Volume 11, No. 4, Fall 1998
Enhancing Elementary Curricula through Internet Technology, Volume 11, No. 4, Fall 1998
"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners, Volume 11, No. 4, Fall 1998
Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm, Volume 11, No. 4, Fall 1998
Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment, Volume 11, No. 4, Fall 1998

Isadore Newman, The University of Akron
Changes in the Personal and Teaching Efficacy Levels of Teachers Exposed to the FOCUS Model, Volume 11, No. 2, Spring 1998

Brad E. Oliver, Ball State University
Appropriate Educational Applications of the World Wide Web Today, Volume 11, No. 4, Fall 1998
Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web, Volume 11, No. 4, Fall 1998
Enhancing Elementary Curricula through Internet Technology, Volume 11, No. 4, Fall 1998
"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners, Volume 11, No. 4, Fall 1998
Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm, Volume 11, No. 4, Fall 1998
Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment, Volume 11, No. 4, Fall 1998

Emily Rodgers, The Ohio State University
Reading Recovery (Conversations with Project Directors), Volume 11, No. 2, Spring 1998

Michael H. Romanowski, Ohio Northern University
Teacher's Lives and Beliefs: Influences that Shape the Teaching of U. S. History, Volume 11, No. 2, Spring 1998

Gary Russell, The Center for Professional Advancement
Changes in the Personal and Teaching Efficacy Levels of Teachers Exposed to the FOCUS Model, Volume 11, No. 2, Spring 1998

Nancy G. Saunders, Ball State University
Appropriate Educational Applications of the World Wide Web Today, Volume 11, No. 4, Fall 1998
Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web, Volume 11, No. 4, Fall 1998
Enhancing Elementary Curricula through Internet Technology, Volume 11, No. 4, Fall 1998
"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners, Volume 11, No. 4, Fall 1998
Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm, Volume 11, No. 4, Fall 1998
Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment, Volume 11, No. 4, Fall 1998

Robert J. Shoop, Kansas State University
The Legal Context of Sexual Harassment in Education, Volume 11, No. 1, Winter 1998

Jay C. Thompson, Jr., Ball State University
Appropriate Educational Applications of the World Wide Web Today, Volume 11, No. 4, Fall 1998
Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web, Volume 11, No. 4, Fall 1998
Enhancing Elementary Curricula through Internet Technology, Volume 11, No. 4, Fall 1998
"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners, Volume 11, No. 4, Fall 1998
Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm, Volume 11, No. 4, Fall 1998
Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment, Volume 11, No. 4, Fall 1998

Index of Articles: 1998

An Exploratory Study of the Level of Reflection Attained by Preservice Teachers
Connie L. Bowman, University of Dayton
Maria Elena Galvez-Martin, Ohio State University at Lima
Margaret A. Morrison, Hilliard City School District
Volume 11, No. 2, Spring 1998

Appropriate Educational Applications of the World Wide Web Today
Loren D. Malm, Ball State University
Bobby G. Malone, Ball State University
Fred W. Nay, Ball State University
Brad E. Oliver, Ball State University
Nancy G. Saunders, Ball State University
Jay C. Thompson, Jr., Ball State University
Volume 11, No. 4, Fall 1998

Changes in the Personal and Teaching Efficacy Levels of Teachers Exposed to the FOCUS Model
John W. Fraas, Ashland University
Isadore Newman, The University of Akron
Gary Russell, The Center for Professional Advancement
Volume 11, No. 2, Spring 1998

Diversity Issues in Educational Research
James B. Boyer, Kansas State University
Volume 11, No. 1, Winter 1998

Enhancing Classroom Interaction in Distance Education Utilizing the World Wide Web
Loren D. Malm, Ball State University
Bobby G. Malone, Ball State University
Fred W. Nay, Ball State University
Brad E. Oliver, Ball State University
Nancy G. Saunders, Ball State University
Jay C. Thompson, Jr., Ball State University
Volume 11, No. 4, Fall 1998

Enhancing Elementary Curricula through Internet Technology
Loren D. Malm, Ball State University
Bobby G. Malone, Ball State University
Fred W. Nay, Ball State University
Brad E. Oliver, Ball State University
Nancy G. Saunders, Ball State University
Jay C. Thompson, Jr., Ball State University
Volume 11, No. 4, Fall 1998

"Future Proofing" Faculty: The Struggle to Create Technical Lifelong Learners
Loren D. Malm, Ball State University
Bobby G. Malone, Ball State University
Fred W. Nay, Ball State University
Brad E. Oliver, Ball State University
Nancy G. Saunders, Ball State University
Jay C. Thompson, Jr., Ball State University
Volume 11, No. 4, Fall 1998

Learning About Sex: The Missing Paradigms and Challenges to Educational Researchers (Presidential Address 1997)
Sharon McNeely, Northeastern Illinois University
Volume 11, No. 1, Winter 1998

The Legal Context of Sexual Harassment in Education
Robert J. Shoop, Kansas State University
Volume 11, No. 1, Winter 1998

Nontraditional Students in Higher Education: Meeting Their Needs as Learners (Research Alive)
Mary K. Bendixen-Noe, The Ohio State University, Newark
Carmen Giebelhaus, Ohio Department of Education
Volume 11, No. 2, Sprint 1998

Observation of Instruction via Distance Learning: The Need for a New Evaluation Paradigm
Loren D. Malm, Ball State University
Bobby G. Malone, Ball State University
Fred W. Nay, Ball State University
Brad E. Oliver, Ball State University
Nancy G. Saunders, Ball State University
Jay C. Thompson, Jr., Ball State University
Volume 11, No. 4, Fall 1998

Reading Recovery (Conversations with Project Directors)
Emily Rodgers, The Ohio State University
Volume 11, No. 2, Spring 1998

The Role of Communication in Providing Leadership for School Restructuring
Theodore J. Kowalski, Ball State University
Volume 11, No. 1, Winter 1998

(continued on next page)

EDITORS

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Index of Articles: 1998 (cont.)

Student Perspectives: Responses to Internet Opportunities in a Distance Learning Environment
Loren D. Malm, Ball State University
Bobby G. Malone, Ball State University
Fred W. Nay, Ball State University
Brad E. Oliver, Ball State University
Nancy G. Saunders, Ball State University
Jay C. Thompson, Jr., Ball State University
Volume 11, No. 4, Fall 1998

Successful Implementation of Technology into the Educational Process
Duane O. Eddy, Ball State University
Volume 11, No. 4, Fall 1998

Teacher's Lives and Beliefs: Influences that Shape the Teaching of U. S. History
Michael H. Romanowski, Ohio Northern University
Volume 11, No. 2, Spring 1998

Technology and Teaching in the Communications Age
Molly Herman Baker, Western Illinois University
Volume 11, No. 1, Winter 1998

Violence Goes to School
Jack Levin, Northeastern University
Volume 11, No. 1, Winter 1998

1371

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